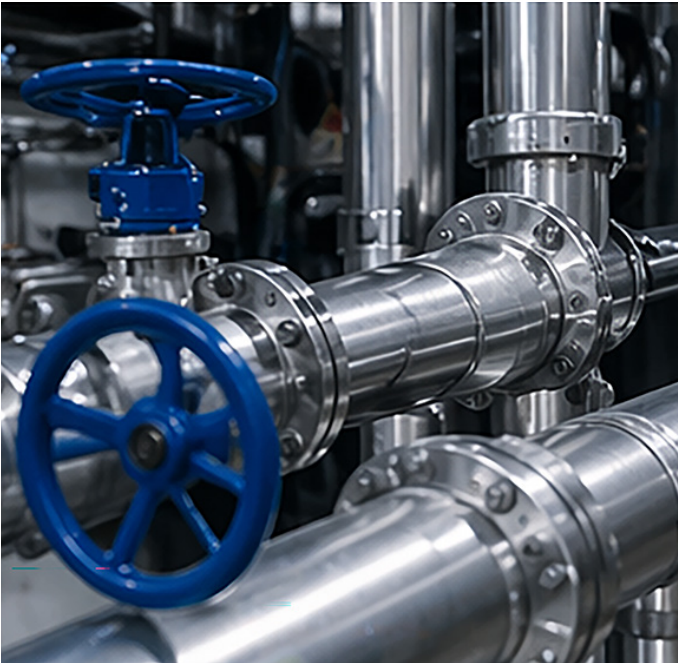




ZERUST®  **EXCOR®**

CORROSION SOLUTIONS FOR DATA CENTERS



ZERUST® is a product of
Northern Technologies
International Corporation



PROVEN SAFE, RELIABLE, AND EFFECTIVE CORROSION SOLUTIONS FOR DATA CENTERS

For over 50 years, ZERUST® has helped protect critical metal assets in demanding environments worldwide. In data centers, where uptime and reliability are non-negotiable, corrosion can quietly compromise cooling systems, electrical components, and backup infrastructure.

ZERUST® corrosion protection solutions are designed to safeguard sensitive equipment during manufacturing, transport, installation, hydrostatic testing, and long-term operation. Our technologies protect metals without interfering with performance, conductivity, or sensitive electronics, making them ideal for modern data center environments.



THE BENEFITS OF ZERUST® CORROSION INHIBITOR PRODUCTS

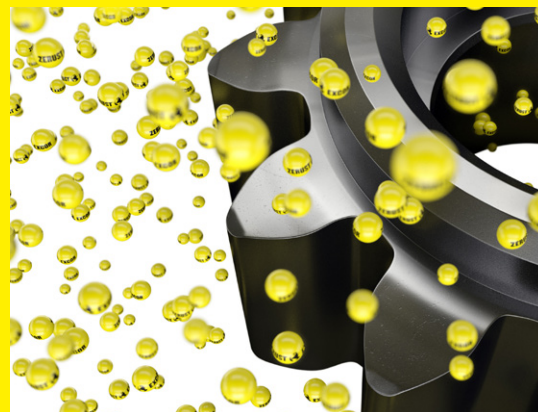
- **Multimetal Protection:** Effectively protects ferrous and non-ferrous metals, including copper, aluminum, and mixed alloys commonly found in data center cooling systems, piping, and electrical components
- **Safe for Sensitive Electronics:** Designed for use around electrical systems and critical infrastructure without interfering with performance, conductivity, or reliability.
- **Clean and Easy to Use:** VCI solutions leave surfaces clean, dry, and ready for immediate use, eliminating the need for additional cleaning or degreasing.
- **Comprehensive Lifecycle Protection:** Provides corrosion protection during manufacturing, storage, shipping, installation, hydrostatic testing, and operation.
- **Reduced Maintenance and Downtime:** Helps prevent corrosion-related failures, lowering maintenance costs and supporting continuous uptime in mission-critical environments.
- **Versatile Across Data Center Environments:** Compatible with a wide range of materials and conditions, from controlled indoor environments to high-density cooling systems.
- **Proven Technology with Global Support:** Backed by over 50 years of experience, ZERUST® solutions are supported by global technical expertise and corrosion testing services.



HOW ZERUST® VCI WORKS

ZERUST® Vapor Corrosion Inhibitor (VCI) technology releases invisible, odorless molecules into an enclosed space. These molecules form a protective molecular layer on exposed metal surfaces, interrupting the electrochemical corrosion process.

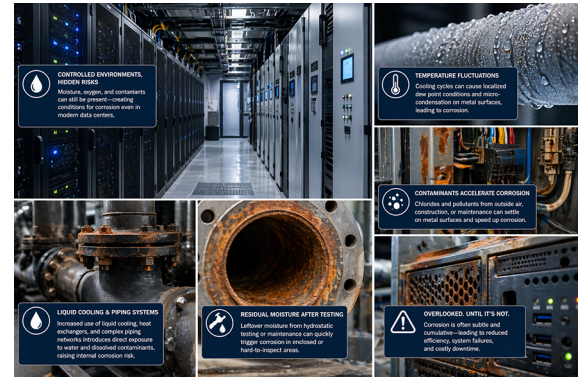
VCI protection reaches recessed areas, internal surfaces, and complex geometries that traditional coatings cannot. When the enclosure is opened, the VCI molecules safely dissipate, leaving parts clean, dry, and ready for immediate use without additional cleaning or degreasing.



CORROSION CHALLENGES IN DATA CENTERS

Data centers are designed to operate in controlled environments, but corrosion remains a persistent and often underestimated risk. Corrosion occurs when moisture, oxygen, and contaminants are present, conditions that can still exist within modern facilities.

Temperature fluctuations from equipment loads and cooling system cycling can create localized dew point conditions, leading to condensation on metal surfaces within piping, cooling systems, and electrical enclosures. This micro-condensation is often invisible but provides the moisture needed for corrosion to initiate.



Humidity variations, along with airborne contaminants such as chlorides and industrial pollutants, can further accelerate corrosion. These contaminants may enter through outside air intake or be introduced during construction and maintenance activities, settling on sensitive metal surfaces.

As data centers evolve to support AI and high-density computing, the use of liquid cooling systems, heat exchangers, and complex piping networks continues to increase. These systems introduce direct exposure to water and dissolved contaminants, raising the risk of internal corrosion during testing, commissioning, and operation.

Residual moisture left after hydrostatic testing or maintenance is another common issue. If systems are not properly treated and protected, corrosion can begin quickly in enclosed or hard-to-inspect areas.

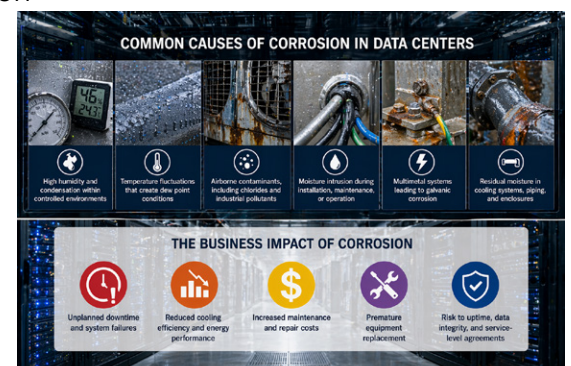
Because these risks are often subtle and cumulative, corrosion in data centers is frequently overlooked until it leads to reduced efficiency, system failures, or costly downtime.

COMMON CAUSES OF CORROSION IN DATA CENTERS

- High humidity and condensation within controlled environments
- Temperature fluctuations that create dew point conditions
- Airborne contaminants, including chlorides and industrial pollutants
- Moisture intrusion during installation, maintenance, or operation
- Multimetal systems leading to galvanic corrosion
- Residual moisture in cooling systems, piping, and enclosures

THE BUSINESS IMPACT OF CORROSION

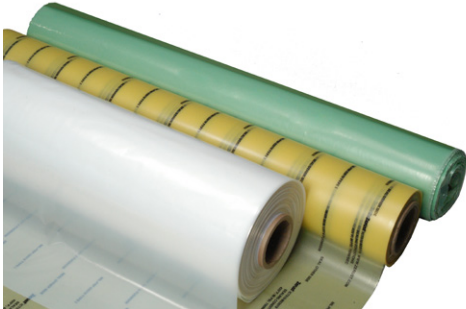
- Unplanned downtime and system failures
- Reduced cooling efficiency and energy performance
- Increased maintenance and repair costs
- Premature equipment replacement
- Risk to uptime, data integrity, and service-level agreements



Implementing a proactive corrosion protection strategy is essential to maintaining system reliability, optimizing performance, and ensuring continuous uptime in data center operations.

VCI FILMS

ZERUST® VCI FILMS FOR EQUIPMENT PROTECTION



ZERUST® VCI packaging films provide effective corrosion protection for metal components during storage, shipping, and staging. Impregnated with Vapor Corrosion Inhibitor (VCI) technology, these films release protective molecules that form an invisible, corrosion-inhibiting layer on exposed metal surfaces. VCI films are ideal for protecting fabricated parts, spare components, assemblies, and electronic hardware, keeping them clean, dry, and ready for immediate use without the need for additional coatings or cleaning.

Key Features

- Continuous VCI protection for enclosed metal surfaces
- Available for ferrous, non-ferrous, and multimetal applications
- Options for anti-static protection for electronics
- Strong, durable films for demanding handling conditions
- Available in bags, sheeting, tubing, and custom formats

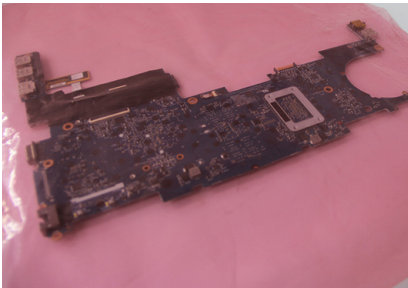
AVAILABLE SOLUTIONS

ZERUST® ICT®510-C VCI FILMS (FERROUS, NON-FERROUS, AND MULTIMETAL)



ZERUST® ICT®510-C VCI Films provide proven corrosion protection for metal components during storage, shipping, and staging. Available in ferrous, non-ferrous, and multimetal formulations, these films release Vapor Corrosion Inhibitors that protect exposed metal surfaces, including hard-to-reach internal areas. Designed for durability and performance, ICT®510-C films are ideal for protecting fabricated metal parts, assemblies, and spare components used in data center infrastructure.

ZERUST® ICT®510-ATS ANTI-STATIC VCI FILM



ZERUST® ICT®510-ATS Anti-Static VCI Film combines corrosion protection with static dissipative properties, making it ideal for protecting sensitive electronic components. This film prevents electrostatic discharge (ESD) buildup while simultaneously delivering VCI protection to metal surfaces. It is well suited for packaging and protecting electronic assemblies, connectors, and control components used in data centers.

ZERUST® VCI POLY BAGS (FERROUS, NON-FERROUS, AND MULTIMETAL)



ZERUST® ICT® VCI Poly Bags offer convenient, ready-to-use corrosion protection for metal parts and assemblies. These bags are made from high-quality polyethylene Impregnated with VCI technology to protect enclosed metal surfaces without the need for additional coatings or oils. Available in a variety of sizes and styles, they provide an efficient solution for protecting spare parts, fittings, and smaller components.

VCI FILMS

ZERUST® ICT®510-PCR30 POST-CONSUMER RECYCLED VCI FILM



ZERUST® ICT®510-PCR30 VCI Film incorporates post-consumer recycled content while maintaining strong corrosion protection and mechanical performance. This film helps support sustainability initiatives by reducing reliance on virgin plastics, while still delivering reliable VCI protection for metal components. It is suitable for a wide range of data center applications where both performance and environmental responsibility are priorities.

ZERUST® NATUR-VCI® BIODEGRADABLE AND COMPOSTABLE FILM



ZERUST® Natur-VCI® Film provides effective corrosion protection while supporting sustainability goals. This fully biodegradable and compostable film delivers multimetal VCI protection similar to traditional polyethylene films, while reducing environmental impact. It is an ideal solution for organizations seeking to reduce plastic waste without compromising corrosion protection performance.

ZERUST® ICT®510-SRK VCI SHRINK FILM



ZERUST® ICT®510-SRK VCI Shrink Film provides corrosion protection for large or irregularly shaped equipment that requires full enclosure. When heat-shrunk, the film forms a tight barrier around components, locking in VCI protection while helping to reduce exposure to moisture and contaminants. It is well suited for protecting large assemblies, cooling system components, and equipment during transport, staging, or longer-term storage.

ZERUST® ICT®510-SM VCI STRETCH FILM



ZERUST® ICT®510-SM VCI Stretch Film combines load stabilization with corrosion protection, making it ideal for palletized shipments and staged equipment. This film securely wraps components while delivering VCI protection to exposed metal surfaces. It is commonly used for bundling pipes, fittings, and assemblies, helping ensure parts remain protected and organized during handling and storage.

These solutions help ensure components remain corrosion-free and ready for installation without additional cleaning or rework.

BEST PRACTICE REMINDER

VCI technology works best when:

- Parts are clean and dry before packaging
- The package is properly sealed or enclosed
- The correct VCI chemistry is matched to the metal type

Scan the QR code to access our "How to Use VCI Packaging" guide.



VCI EMITTERS & DIFFUSERS

PROTECTION FOR ENCLOSED SPACES AND ELECTRONICS



ZERUST® VCI emitters and diffusers provide targeted, long-lasting corrosion protection for metal components within enclosed spaces. These products release Vapor Corrosion Inhibitor (VCI) molecules that diffuse throughout the enclosure and form a protective layer on exposed metal surfaces, including hard-to-reach internal areas. Designed for use in electrical cabinets, control panels, server enclosures, and junction boxes, they protect critical electronics and metal components without requiring direct contact. Easy to install and maintenance-free, they offer a reliable solution for preventing corrosion in sensitive data center environments during operation, storage, and standby conditions.

Key Features

- Protects critical electronics and internal metal surfaces
- Easy installation
- Continuous protection in enclosed environments
- Safe for use around sensitive equipment

AVAILABLE SOLUTIONS

ACTIVDRI™ PACKETS



ZERUST® ActivDri™ packets combine moisture control and VCI technology to provide dual protection against both moisture and corrosion. These packets actively absorb moisture while simultaneously releasing corrosion-inhibiting vapors that protect metal surfaces within enclosed environments. This makes them ideal for protecting sensitive components such as electronics, connectors, and metal assemblies in packaging, storage, or transport where humidity control is critical.

ACTIVDRI™ CAP-50A CAPSULE



ZERUST® ActivDri™ CAP-50A capsules deliver combined moisture control and corrosion protection in a compact, easy-to-install design. Engineered for use in enclosed spaces such as electrical cabinets, control panels, and server enclosures, the capsule continuously releases VCI molecules while helping manage internal humidity levels. Its durable housing and simple mounting make it well suited for protecting critical electronics and infrastructure in data center environments.

ZERUST® VAPOR CAPSULES



ZERUST® Vapor Capsules are compact VCI emitters designed to provide corrosion protection within enclosed spaces. Once installed, they release a controlled amount of corrosion-inhibiting vapor that forms a protective layer on exposed metal surfaces. These capsules are commonly used in electrical enclosures, junction boxes, and control systems, where they help protect sensitive components from corrosion without requiring direct contact or coatings.

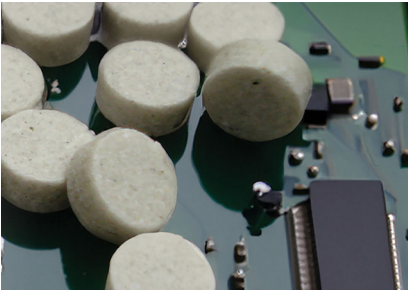
VCI EMITTERS & DIFFUSERS

ZERUST® ZAK-M22 VCI CAPSULES



ZERUST® ZAK-M22 VCI Capsules are engineered to provide targeted corrosion protection in small to medium enclosed environments. The capsule emits VCI molecules that diffuse throughout the enclosure, protecting internal metal surfaces including electrical contacts and assemblies. Its compact size and simple installation make it ideal for use in electronics, instrumentation, and control systems where space is limited.

ZERUST® ACTIVTAB™(LS)



ZERUST® ActivTab™(LS) tablets are fast-acting VCI emitters designed to provide immediate corrosion protection in enclosed or semi-enclosed spaces. These tablets rapidly release corrosion-inhibiting vapors, making them ideal for short-term protection or applications where quick protection is required. They are commonly used during maintenance, shutdowns, or temporary storage to prevent flash corrosion on exposed metal surfaces.

ZERUST® ICT® PLASTABS®



ZERUST® ICT® Plastabs™ are durable plastic VCI emitters designed for long-term corrosion protection in enclosed environments. These tabs continuously release corrosion-inhibiting vapors, protecting metal components such as electrical contacts, connectors, and internal assemblies. Their solid construction allows for easy placement or attachment inside enclosures, making them well suited for protecting electronics and equipment during both operation and storage.

ZERUST® COR TAB®



ZERUST® ICT® Cor-Tabs™ are compact VCI tablets designed to provide corrosion protection within enclosed packaging or equipment. These tablets release corrosion-inhibiting vapors that protect metal surfaces without leaving residue, making them ideal for use in packaging, electrical enclosures, or equipment storage. Their small size allows for flexible placement in tight or hard-to-reach areas where consistent corrosion protection is needed.

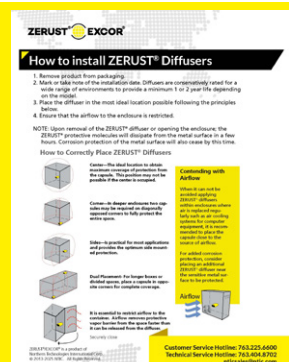
These solutions help maintain reliability by preventing corrosion in critical enclosed systems where failure is not an option.

BEST PRACTICE REMINDER

VCI technology works best when:

- Installed inside enclosed spaces where VCI vapors can be retained
- Correct emitter type and quantity are selected based on enclosure volume
- Enclosures are kept closed as much as possible to maintain VCI concentration

Scan the QR code to access our "How to install ZERUST® Diffusers" guide.



AXXANOL™ 718-ESS ELECTRICAL CORROSION INHIBITOR

RELIABLE PROTECTION FOR CRITICAL ELECTRICAL SYSTEMS



ZERUST®/EXCOR® Axxanol™ 718-ESS is a specialized electrical corrosion inhibitor designed to protect sensitive electronic components and metal surfaces in data center environments. It forms a thin, water-displacing protective film that guards against humidity, condensation, and airborne contaminants without affecting electrical performance.

Unlike traditional coatings, Axxanol™ 718-ESS is engineered for use on active infrastructure such as electrical panels, control systems, and junction boxes. It provides effective corrosion protection while maintaining conductivity, making it ideal for maintaining reliability in mission-critical systems.

Key Features

- Electrical corrosion inhibitor that does not interfere with conductivity or electrical contacts
- Leaves a thin, non-hardening, non-staining protective film
- Displaces moisture and protects against humidity, acid gases, and contaminants
- Safe for use on in-service electronics after proper shutdown and application
- Available in convenient spray and aerosol formats for maintenance and service

HOW IT WORKS

Axxanol™ 718-ESS forms a thin, continuous protective film that displaces moisture and isolates metal surfaces from corrosive elements. This barrier helps prevent oxidation while maintaining electrical conductivity.

Unlike heavy coatings, the film remains soft and non-hardening, allowing components to continue operating without interference while still benefiting from corrosion protection.

WHEN TO APPLY

Apply Axxanol™ 718-ESS during:

- Installation and commissioning
- Preventative maintenance programs
- Post-cleaning or exposure to moisture
- High-humidity seasonal conditions
- Equipment shutdown or inspection intervals

DESIGNED FOR DATA CENTER ENVIRONMENTS

Axxanol™ 718-ESS is well suited for protecting:

- Electrical cabinets and control panels
- Junction boxes and terminal connections
- Backup power systems and switchgear
- Exposed metal components requiring light lubrication and corrosion protection



The product dries quickly, leaving a soft, invisible film that protects metal surfaces without requiring disassembly or complex application processes.

WHEN TO USE AXXANOL™ 718-ESS VS. VCI EMITTERS

UNDERSTANDING THE RIGHT PROTECTION METHOD

ZERUST® offers both VCI emitter technologies and coating-based solutions like Axxanol™ 718-ESS. While both protect against corrosion, they work in fundamentally different ways and are suited for different environments.

WHEN TO USE VCI EMITTERS



VCI emitters are ideal for:

- Sealed or enclosed environments
- Electrical cabinets with minimal air exchange
- Long-term passive protection
- Hard-to-reach internal surfaces

VCI technology works by releasing corrosion-inhibiting molecules into a sealed space, forming a protective layer on metal surfaces.

WHEN TO USE AXXANOL™ 718-ESS



Axxanol™ 718-ESS is the better choice when:

- Enclosures are not fully sealed or have air exchange
- Continuous airflow reduces VCI concentration
- Immediate, direct surface protection is required
- Maintenance access allows for periodic reapplication

Because VCIs rely on a contained environment, they may not provide sufficient protection in ventilated or frequently opened enclosures. In these cases, a direct-applied coating like Axxanol™ 718-ESS ensures consistent protection.

USING BOTH TECHNOLOGIES TOGETHER



In many data center applications, the most effective strategy is to combine both approaches:

- Use Axxanol™ 718-ESS to protect exposed and high-risk surfaces
- Use VCI emitters to protect enclosed or hard-to-reach internal areas
- Apply emitters in sealed zones where vapor protection can be maintained

This layered approach helps ensure comprehensive corrosion protection across complex systems, especially where both enclosed and ventilated spaces exist.

A PRACTICAL APPROACH TO PROTECTION

By selecting the right technology or combination of technologies, data center operators can:

- Improve reliability of electrical systems
- Reduce corrosion-related maintenance
- Extend equipment life
- Minimize risk to uptime and performance

VCI PAPERS

ZERUST® VCI PAPERS FOR RELIABLE CORROSION PROTECTION



ZERUST® VCI papers provide effective, clean corrosion protection for metal components during storage, handling, and transport. Coated with Vapor Corrosion Inhibitor technology, these papers release protective molecules that form a corrosion-inhibiting layer on metal surfaces. VCI papers are ideal for wrapping, interleaving, or void filling, making them a versatile solution for protecting components used in data center infrastructure such as cooling system parts, fabricated assemblies, and spare components.

Key Features

- Provides effective corrosion protection for ferrous and non-ferrous metals
- Clean, dry protection with no residue or additional cleaning required
- Flexible formats for wrapping, interleaving, and void space protection
- Easy to use and integrate into existing packaging processes
- Available in reinforced, poly-coated, and specialty constructions for added durability

AVAILABLE SOLUTIONS

ZERUST® ICT®420 VCI KRAFT PAPER



ZERUST® ICT®420 VCI Kraft Paper is a durable, corrosion-inhibiting paper designed to protect metals during storage and shipment. Coated with ZERUST® VCI technology, it releases protective molecules that form a barrier against corrosion on exposed metal surfaces. This paper is well suited for wrapping, interleaving, or covering components such as machined parts, fittings, and fabricated assemblies. Its strong kraft construction provides reliable handling performance while delivering consistent, clean protection without leaving residue.

ZERUST® ICT®420-35P VCI POLY KRAFT PAPER



ZERUST® ICT®420-35P VCI Poly Kraft Paper combines corrosion protection with a polyethylene coating that enhances moisture resistance. The poly layer acts as a barrier to help reduce moisture intrusion, while the VCI chemistry protects metal surfaces from corrosion. This dual-layer construction makes it ideal for applications where humidity or environmental exposure is a concern. It is commonly used for wrapping components that require both corrosion protection and added durability during handling and transport.

ZERUST® ICT®427 VCI PACKAGING PAPER



ZERUST® ICT®427 VCI Packaging Paper provides reliable corrosion protection for a wide range of metal parts and assemblies. Designed as a general-purpose solution, it delivers consistent VCI performance while remaining cost-effective and easy to use. The paper can be used for wrapping, layering, or separating components to prevent metal-to-metal contact and corrosion. It is a practical option for protecting fabricated parts, spare components, and assemblies during storage or staging.

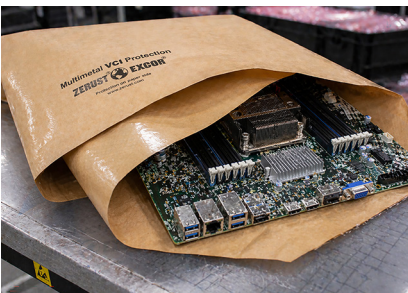
VCI PAPERS

ZERUST® ICT®430-35SR VCI SCRIM PAPER



ZERUST® ICT®430-35SR VCI Scrim Paper is reinforced with a scrim layer to provide enhanced strength, tear resistance, and durability. This added reinforcement makes it well suited for protecting heavier, sharp-edged, or irregularly shaped components that may damage standard paper during handling. In addition to its mechanical strength, the paper delivers effective VCI corrosion protection, helping ensure that large or complex parts remain protected throughout transport and storage.

ZERUST® ICT®432-35P POLY VCI KRAFT PAPER



ZERUST® ICT®432-35P Poly VCI Kraft Paper features a poly-coated construction that provides improved moisture barrier properties along with corrosion protection. The polyethylene layer helps shield components from humidity and environmental exposure, while the VCI chemistry protects metal surfaces from corrosion. This combination makes it ideal for applications where both durability and moisture resistance are required, such as protecting components in variable or high-humidity environments.

ZERUST® ICT®420-170 VCI CHIPS



ZERUST® ICT®420-170 VCI Chips are small pieces of VCI-treated paper designed to provide corrosion protection within enclosed spaces or as void fill in packaging. These chips release VCI molecules that protect metal surfaces, including hard-to-reach internal areas that are difficult to protect with traditional wrapping materials. They are especially useful for filling void spaces in packaging, protecting internal cavities, or supplementing other VCI packaging methods to ensure complete coverage.

ZERUST® VCI papers offer a flexible and effective solution for protecting metal components throughout the data center lifecycle. From packaging and transport to staging and storage, VCI papers help ensure parts remain clean, corrosion-free, and ready for installation, supporting reliable performance in critical environments.

BEST PRACTICE REMINDER

VCI technology works best when:

- Parts are clean and dry before packaging
- The package is properly sealed or enclosed
- The correct VCI chemistry is matched to the metal type

Scan the QR code to access our "How to Use VCI Paper" guide.



HYDROSTATIC TESTING IN DATA CENTERS

Hydrostatic testing is a critical step in validating the integrity of data center cooling systems, piping networks, and heat exchangers before commissioning. While essential, this process introduces water and dissolved contaminants directly onto internal metal surfaces, creating ideal conditions for corrosion to begin.

Test water often contains dissolved oxygen, chlorides, and other ionic contaminants that can quickly attack metal surfaces. In multimetal systems commonly found in data centers, including copper, aluminum, and steel, these conditions can accelerate galvanic corrosion.



In many cases, test water quality is not tightly controlled or may vary by location, increasing the likelihood of introducing corrosive elements into the system. Even short exposure times during testing can initiate corrosion, especially on freshly fabricated or cleaned metal surfaces. If systems are not properly treated, dried, and protected after testing, these early stages of corrosion can continue to develop during idle periods before startup.

After testing, residual moisture left behind in piping and equipment can continue to drive corrosion, especially in enclosed or hard-to-inspect areas. Without proper treatment, corrosion can begin immediately and remain undetected until it impacts system performance.

As data centers adopt advanced liquid cooling technologies, system complexity increases. This makes proper corrosion protection during hydrostatic testing more critical than ever.

COMMON CAUSES OF CORROSION IN DATA CENTERS

- Dissolved oxygen and gases in test water
- Chlorides and ionic contaminants
- Microbial activity in stagnant water
- Residual moisture after draining

THE BUSINESS IMPACT OF CORROSION

- Reduced cooling efficiency and system performance
- Increased maintenance and cleaning requirements
- Premature failure of piping and components
- Delays in commissioning and startup
- Risk to long-term reliability and uptime

Proactive corrosion protection during hydrostatic testing is essential to ensure system integrity, reliable startup, and long-term performance.



HYDROSTATIC TESTING SOLUTIONS

PROTECTING SYSTEMS DURING TESTING AND COMMISSIONING



ZERUST® hydrostatic testing solutions are designed to protect internal metal surfaces from corrosion during and after testing. By treating test water with corrosion inhibitors, these solutions help neutralize harmful contaminants and prevent corrosion from forming on system components.

Key Features

- Protects internal metal surfaces during hydrostatic testing and layup
- Reduces the impact of dissolved oxygen, chlorides, and contaminants in test water
- Easy to dose and apply with no impact on system performance
- Supports clean systems and reliable commissioning

AVAILABLE SOLUTIONS

ZERUST® AXXAVIS™ HST-10



ZERUST® AxxaVis™ HST-10 is a corrosion inhibitor designed for hydrostatic testing of ferrous metal systems. It protects internal surfaces from rust during testing and short-term layup, helping ensure systems remain clean and ready for commissioning. The product is easy to apply and provides reliable protection without interfering with system performance.

ZERUST® AXXATEC™ HST-20L



ZERUST® Axxatec™ HST-20L is a water treatment concentrate formulated to reduce the corrosivity of hydrostatic test water. It works by neutralizing dissolved salts and ionic contaminants that contribute to corrosion, helping protect a wide range of metal systems during testing.

ZERUST® AXXATEC™ HST-M100



ZERUST® Axxatec™ HST-M100 is an advanced multimetal corrosion inhibitor designed for systems containing copper, aluminum, and ferrous metals. Its low-foam formulation makes it ideal for complex cooling systems and piping networks, while providing effective protection against corrosion caused by dissolved contaminants in test water.

ENSURING RELIABLE SYSTEM PERFORMANCE

ZERUST® hydrostatic testing solutions help ensure that data center cooling systems and infrastructure are protected from testing through commissioning and operation. By preventing corrosion at this critical stage, ZERUST® helps reduce risk, improve reliability, and support long-term system performance.

THE Z-CIS® APPROACH

Corrosion issues in data center environments rarely result from a single isolated factor. Instead, they are typically driven by a combination of conditions across equipment manufacturing, transport, installation, hydrostatic testing, commissioning, and ongoing operation.

Applying isolated corrosion protection products without evaluating the full lifecycle of the equipment often leads to incomplete protection, recurring reliability issues, and premature degradation of critical components.

To address this, ZERUST® developed Z-CIS® (ZERUST® Corrosion Inhibiting System), a structured, engineering-driven approach that identifies corrosion risks and applies the right combination of technologies to eliminate them.

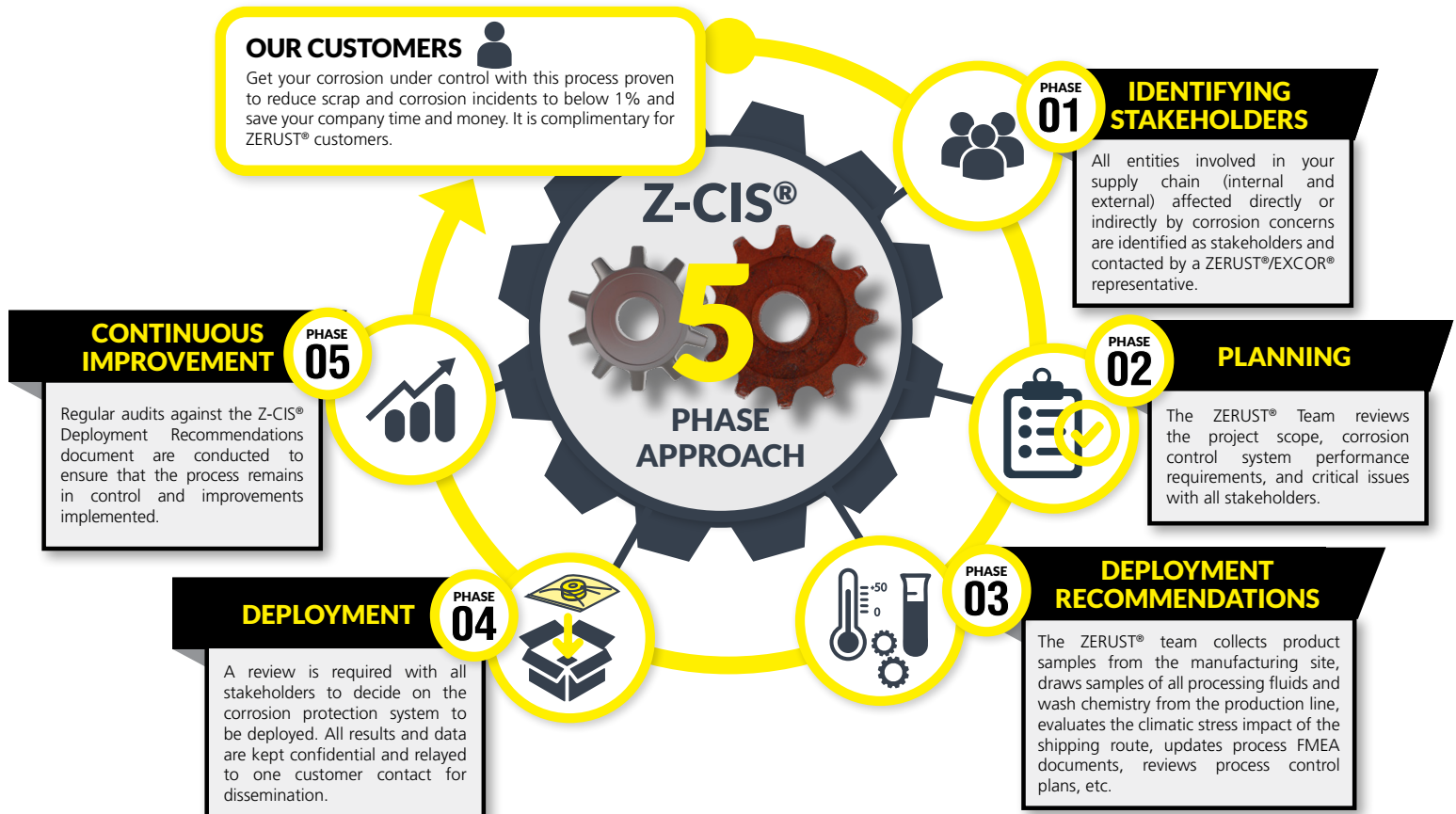
WHAT IS Z-CIS®?

Z-CIS® is a holistic corrosion management framework that integrates:

- Risk assessment
- Product selection
- Process optimization
- Validation and ongoing improvement

Rather than selling a single product, ZERUST® delivers a complete corrosion protection system, customized to your facility type, asset class, and operational environment.

Z-CIS® ensures corrosion protection is designed in, not reacted to later.



PROTECTING RELIABILITY THROUGH CORROSION CONTROL

For over 50 years, ZERUST® has helped protect critical assets in demanding environments. In data centers, corrosion can occur during manufacturing, transport, installation, and operation. From cooling systems and piping to electrical enclosures, ZERUST® solutions help prevent corrosion, maintain system integrity, and support reliable performance.

WHAT SETS ZERUST® APART

Industry-Proven Technology

ZERUST® corrosion inhibitor technologies are used worldwide to protect critical assets across:

- Data centers and digital infrastructure
- Cooling system OEMs and equipment manufacturers
- Power generation and utilities

Our technologies protect metals at the molecular level, reaching internal surfaces, enclosed spaces, and complex geometries where corrosion is most likely to initiate.

Complete Corrosion Solutions

Unlike single-product suppliers, ZERUST® offers:

- VCI films, papers, and packaging
- VCI emitters and diffusers
- Hydrostatic testing additives
- Moisture control solutions
- Rust preventatives and coatings
- Technical support and application expertise

One supplier. One system. Total corrosion protection.

Environmentally Responsible

ZERUST® solutions are designed to meet modern environmental & operational requirements:

- Nitrite-free options
- Clean, dry protection with no residue or additional cleaning required
- Reduced environmental impact compared to traditional coatings and oils

Global Reach, Local Support

With operations and partners in more than 70 countries, ZERUST® provides responsive technical support wherever your operations are located.

Our experts provide fast, region-specific technical support wherever you operate.

Measurable Cost Savings

ZERUST® customers routinely achieve:

- Reduced corrosion-related failures
- Lower maintenance costs
- Improved equipment reliability
- Extended asset life
- Protection of uptime and performance

***Corrosion prevention isn't
a cost, it's an investment!***

Certified Quality You Can Trust



Northern Technologies International Corporation (NTIC), the parent company of ZERUST®, is certified to the ISO 9001 Quality Management Standard. This certification reflects our commitment to delivering high-quality corrosion-inhibiting products and services while continuously improving our operations. Through our Quality Management System (QMS), we focus on productivity, innovation, regulatory compliance, and customer satisfaction to support sustainable growth and global excellence.

Global Support

Algeria	Denmark	Mexico	Sri Lanka
Angola	Ecuador	Monaco	Sweden
Argentina	Estonia	Morocco	Switzerland
Australia	Finland	Nepal	Taiwan
Austria	France	Netherlands	Thailand
Bangladesh	Gabon	Nigeria	Tunisia
Belarus	Germany	Norway	Turkey
Belgium	Hungary	Peru	Ukraine
Bhutan	India	Philippines	United Arab
Bolivia	Indonesia	Poland	Emirates and
Brazil	Ireland	Portugal	MENA
Canada	Italy	Republic of	(Middle East &
Chile	Japan	Congo	North Africa)
China	Kazakhstan	Romania	United Kingdom
Colombia	Korea	Singapore	United States
Czech Republic	Latvia	Slovak Republic	Uruguay
Democratic	Lithuania	Slovenia	Vietnam
Republic of the	Luxembourg	South Africa	
Congo	Malaysia	Spain	

Visit www.zerust.com for more information!

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† DECLARATION

Corrosion protection claims are based on Northern Technologies International Corporation (NTIC) internal laboratory testing performed under controlled parameters on "contaminate-free substrates. Real-world application corrosion protection duration on different substrates will vary and depends on factors such as, but not limited to, the application or use, environmental / storage conditions, surface cleanliness, type of substrates, and coating thickness (where applicable). The use of the term "Up to" in reference to time is defined as any time duration from zero up to a specified time frame, but in no event beyond the specified time frame. The use of the term "for years" is based on NTIC's experience with its products but is in no way guaranteed. The use of the term "Up to" in reference to volume is defined as any volume from zero up to a specified volume but in no event beyond the specified volume of protection. It is the customer's / user's obligation to evaluate product performance, corrosion protection duration, safety, and suitability for intended use within the scope advised in the data sheet and to comply with all applicable laws and regulations. **LIMITED WARRANTY/DISCLAIMER** Warranty is limited to the replacement of a product that fails to meet specifications. For full warranty and disclaimer information, visit www.zerust.com/warranty.