

VCI Corrosion Protection
PACKAGING/EXPORT PACKAGING
SYSTEM SOLUTIONS FOR
OPTIMAL FINANCIAL GAIN

Phone: 1- 905-628-3232

Toll Free: 1-866-577-2326

Fax: 1-866-908-6992

Email: kpr@corrosionvci.com

www.corrosionvci.com



Export Packaging -System Solutions

- This seminar will focus on the role of KPR ADCOR INC and our VCI (Vapor Corrosion Inhibitor) products as critical components of the export package for companies that have metal parts, electronics, machines and other goods that are being shipped over the ocean or to destinations in North America.
- This is the primary use of VCI packaging products such as VCI poly, VCI Emitters or VCI FOAM inserts.

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KPR will be a partner to deliver perfect products to every customer, every time, any where in the North America!

MDE VCI EMITTERS



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What is the risk of rust??

- How much will it cost me if my product rusts?
- What is the risk of my product rusting?
- How will rusted parts effect our reputation for quality?
- How much market share will I lose?
- Can I afford to take the risk of rejects?

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- Our focus is on integrated solutions that will protect equipment in the manufacturing, storage and delivery cycle.
 - Tangible benefits
 - Full cost (no write downs or credits)
 - Scheduling advantages, inventory levels
 - Intangible benefits
 - Quality, reliability, effectiveness
 - Result is maximizing margins and sales

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- Exports are the most vulnerable point in a product life cycle.
- The container environment is probably the worst condition that it will be subjected to in its life....
- Most Equipment failures are electronic corrosion during shipments.

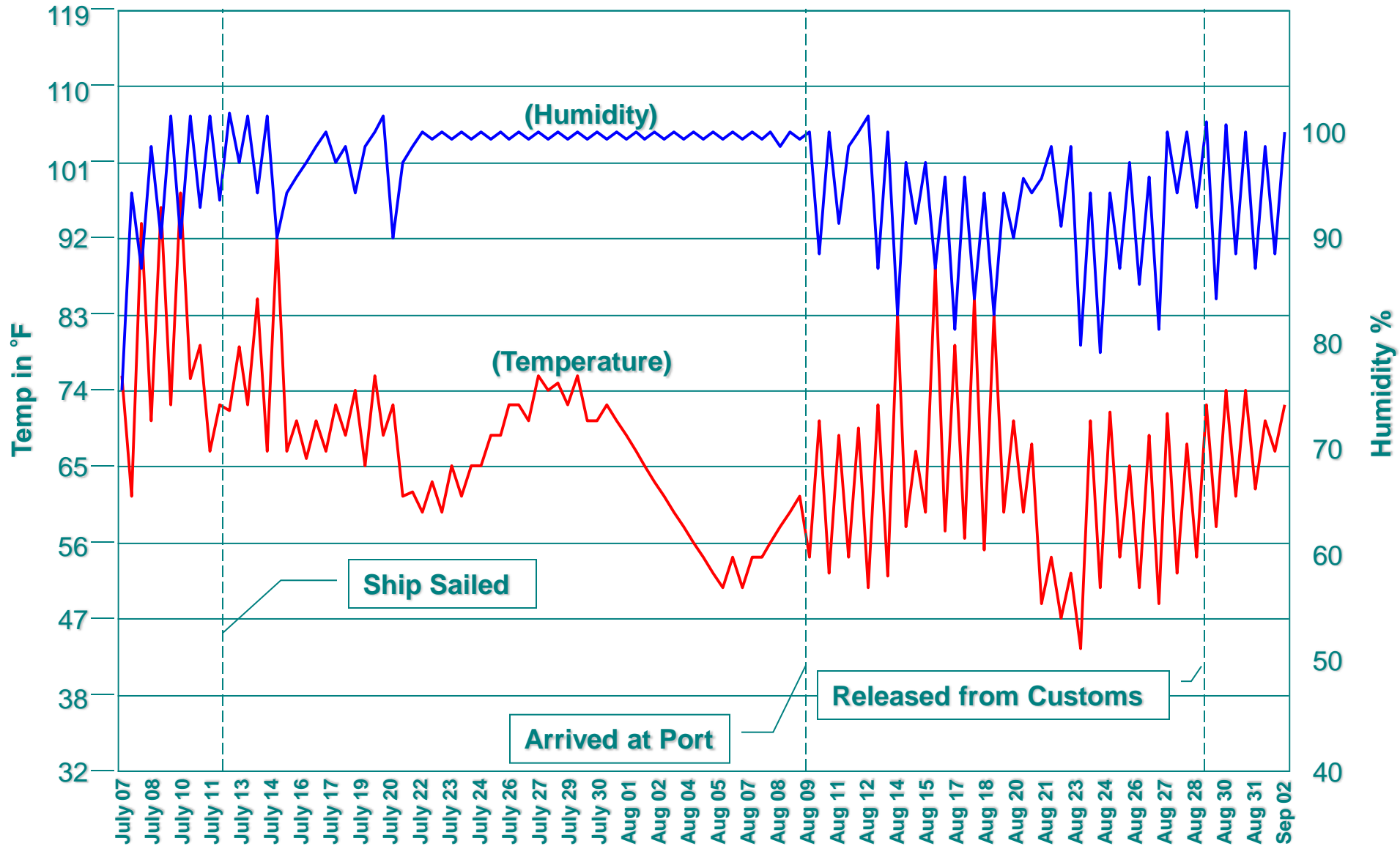
SOURCES OF CORROSION

- TEMPERATURE AND HUMIDITY
 - USUALLY THE BIGGEST CULPRITS
- SALT WATER (OCEAN ENVIRONMENT)
- ENVIRONMENTAL CONDITIONS
 - ACID RAIN-GENERAL
 - PLANT CONDITIONS
 - HYDROGEN SULFIDE, SULFUR DIOXIDE, AMMONIA AND GENERAL ACID RAIN
- PACKAGING CORROSION
 - CAUSED BY ACIDS IN CARTON, CRATE OR PALLET
- TIME

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- The container environment of an export shipment can be the harshest environment the product will ever be subjected to:
- Companies loose control of the container once the container leaves the dock.
 - Weather conditions (rain, humidity, salt, temp)
 - Customs
 - Shipping Errors
 - Murphy's law
 - Quarantine

VCI Packaging Protection Humidity & Temperature Readings Cross Equator Ocean Shipment



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- There are two major elements for the protection of exported products
 - Physical protection---Outside cover, crates etc.
 - Corrosion protection---VCI Corrosion solutions
- The costs associated with corrosion are greater than the cost of physical damage!!
 - Yet most companies ignore, are unaware or downplay the risks and costs.

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- There is more than \$10 billion of corrosion damage worldwide each year that occurs in export shipments.
- Over 80% of these costs are not covered by normal insurance
 - It is up to the shipper to adequately protect the products for normal shipment
 - You need a corrosion control system

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- The requirement for protection of export products will increase at a fast pace.
 - Export volumes continue to rise
 - Global economy that rationalizes production
 - Third world economies are rapidly increasing
 - NAFTA, North American Free Trade Agreement
 - Standards continue to increase
 - Products that are less than perfect are not accepted or are highly discounted.

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- Product standards and expectations will continue to rise
 - Quality
 - Perfect product ISO 14000
 - ISO 9000 CQO 2001
 - QS0 9000
 - Delivery
 - JIT Just In Time Deliveries of Stored Inventory
 - Vendor consolidations
 - More leverage and control

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- We are not just supplying a product, but a solution that will help our customers maximize their products value.
 - Tangible benefits
 - Maintain and enhance the contracted value of each shipment
 - Intangible benefits
 - Long term gain in the perceived value of the product.

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- Quick review of the significant elements of a successful VCI solution:
 - 1. Clean metal surface.
 - 2. An environment around the product that will protect from contaminants and provide a steady stream of available corrosion protection vapor from VCIs.
 - 3. Isolation from corrosion elements as much as possible
 - 4. Rich atmosphere of VCIs around the metal surface.
 - 5. Rapid VCI diffusion in the package

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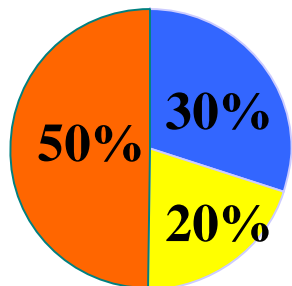
Options for export protection of metal parts

1. Do Nothing
2. Use of desiccants
3. Vapor Barrier bag plastic or foil
4. Single product VCI (film or coating)
5. Integrated VCI solution

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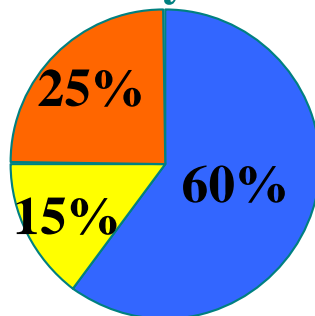
- We often try to compare the protective abilities of the various options available for export shipments.
- The following graph represents the protective abilities of these options.

Relative Corrosion Protection Methods & Risk of Export Containerized Shipments



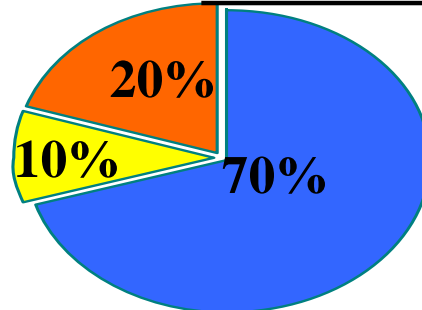
Do Nothing

Plain Poly Film

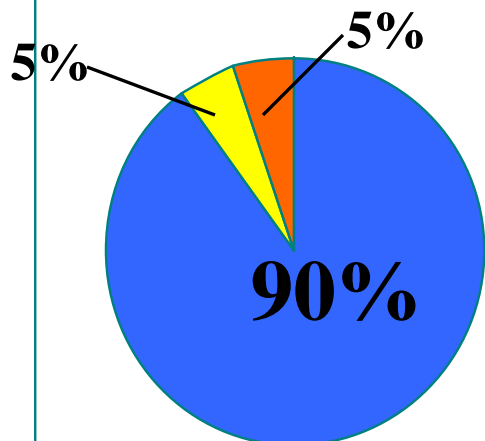


& Desiccant

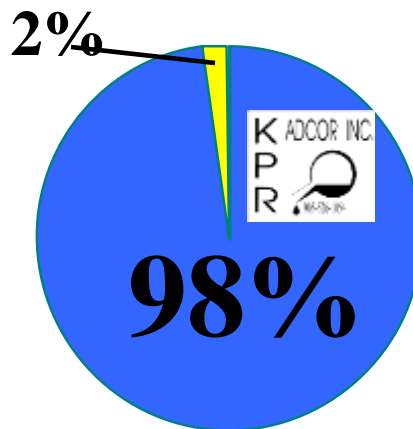
CCI for Ferrous Only



(Sodium Nitrite)



KPR VCI FILM



**Integrated
KPR Adcor VCI
Corrosion
Control System**

 = Rust

 = Questionable Protection

 = VCI Protection & Customer SATISFACTION

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- Global companies are implementing corrosion prevention systems to assure themselves that all products arrive at their customer in perfect rust free condition:
 - Direct from customers production facility
 - Direct from vendors to the customer
 - Direct from protected long term inventory

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- Copeland, Sandvyk Mining & Construction Equipment, Tamrock Loaders, Tigercat Industries, MacDonald Steel, Motorola, John Deere, The big Ten Automotive Manufacturers, Rockwell Automation, Husky Equipment, IBM, Mach Trucks and 1000's of others are examples of:
 - Reducing corrosion rejections by 2/3
 - Improved quality and improved value
 - Value added for their customers
 - Corrosion prevention has become a corporate crusade at several companies and it is making a tremendous positive impact to the bottom line!!

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- Let's look at a real world example:
 - A \$34 starter shipped across the Pacific Ocean
 - 18 starters / row
 - 5 rows per pallet
 - 24 pallets per container
 - (2160 starters per container, \$73,440/container)

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- VCI Corrosion Protection
 - VCI film on each layer
 - VCI shroud or VCI bag film around the complete pallet
- Cost of complete VCI protection
 - VCI sheeting cost us\$205 for container
 - VCI sheeting film for 24 pallets cost us\$365
 - Total cost us\$570-----3/4 of 1 % {0.77 % }

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- What would this company pay for marine insurance?
 - About 1/2% of the value of the product
 - \$400 for insurance against loss and physical damage
 - What will you pay for corrosion insurance?
 - 3/4 of 1% is a real bargain !!
 - When you look at the risk / payback, this is the best investment an exporting company can make!!

Options/Comparisons

\$73,000 Total Value of Container

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
	Do Nothing	Polyfilm & Desiccant	Sodium Nitrite Film	VCI 126	Cortec Solution
Risk of Corrosion	50%	25%	20%	5%	<1%
Cost of Protection	0	\$180	\$130	\$275	\$450
Extrapolated Risk	\$36,000	\$18,250	\$14,600	\$4,000	<\$1,000

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- Proper protection from corrosion for export shipments can be one of the most profitable decisions a company can make.
 - Reduce financial claims to a minimum
 - Improve quality impressions and “intangibles”
 - Save time and valuable company resources
 - Retain your customers through customer satisfaction
 - Gain new customers from Global Referrals

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- Some examples of export items being protected.
 - Automotive
 - VW- engines from Mexico to Germany
 - Honda-export from the US
 - Meritor- global destinations
 - Detroit Diesel- engines
 - GM- global destinations for CKD
 - DaimlerChrysler-CKD

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- Export examples continued
 - Electronics
 - Motorola
 - Tigercat
 - Tamrock Loaders
 - Rockwell Automation
 - Miller Manufacturing
 - Husky Robotics
 - Nortel
 - Lucent
 - Alcatel
 - Xerox

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– Industrial Equipment

- General Motors Electromotive Division
- Husky
- John Deere
- Case
- Tennant
- Copeland
- Boeing
- Fairchild
- Miller, Tamrock, Chamberlain, Sandvyk, Tigercat

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– Consumer Products

- Polaris
- Life Fitness
- Guns (Armi Perazzi)
- Knives (Ontario Knife)
- Ford, GM, Chrysler, Saturn, Honda, Hyundai
- Solectron, IBM, Motorola

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- Global standards for global companies
 - Packaging and corrosion standards that will provide complete protection to all products.
 - » Irrespective of the origin or destination
 - The more valuable the product the more important is the protection
 - Complete assurance of perfect product
 - Standards and implementation are the key
 - Exceeds every Environmental & Workplace Regulation in the world.

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- Usually multiple products that include VCI 126 film and another product
 - VCI foam
 - VCI bags and VCI sheeting
 - VCI Emitters
 - VCI paper
 - Nox-Rust 9900 water based coating
 - V-870CB Electrical Protection Spray
- Full range of protection that will protect in every situation.

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- KPR Adcor Inc. provides integrated corrosion control solutions.
 - Full range of VCI's that WORK
 - Representing several brands of corrosion protection in today's changing marketplace.
 - Partnerships that are there to make our customers better and more profitable.
 - **Corrosionvci.com- A Multitude of Corrosion Protection Systems**

Export Packaging -System Solutions

- KPR Adcor can provide several alternative and effective corrosion control products
- Custom Application Services Available
- Free online corrosion protection evaluation
- Free training for your packing staff.
- Representing several brands of corrosion protection in todays changing marketplace. .
- Call KPR at 905-526-1054 or toll free at 1-866-577-2326 today !
- Visit us on the web at Corrosionvci.com