

# The **LEADING** Edge



**Cortec's European Sales Strategy Meeting 2008:**  
"The Introduction of New Cortec® Products"

*December 2008*



## Cortec's European Sales Strategy Meeting: 2008

Cortec's European Sales Strategy Meeting is now behind us. This meeting was held in beautiful Croatia October 10-11, 2008. Among the presentations the "New Products" attracted much of the interest. We will highlight some of these new products in this newsletter.

*Boris Miksic President and CEO of Cortec® Corporation presents to the crowd at EcoCortec® in Beli Manastir, Croatia*



## What do new products mean to us?

New products are the life blood of any Company. We need new products to cover new applications and new industries, to utilize new environmentally safe and economically acceptable technologies, to meet new Legislative requirements of different regions and countries, and what is most important – we have to innovate faster than our competitors. "It is a race and only the fittest will survive" (Paul Sloan) We have to reach customers with the products they need before our competitors reach them.

That's why innovation is not only new products coming out of R & D, but it is the implementation of new ideas through every aspect of the business – products, services, methods, processes, routes to market, partnerships, etc. Everyone's involvement is very important.

In this Newsletter you will read about our innovative products, about new tools for marketing and sales, and news from the laboratory.



*Rita Kharshan, Cortec's Lab Director presents "new products" at the European Sales Meeting 2008.*

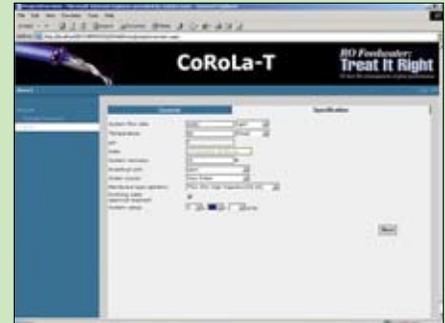
## Water-Treatment Technologies:

### Water: S-14 RO

This multifunctional antiscalant is an excellent addition to Cortec's line of antiscalants S-14 and S-14 Bio. S-14 RO is specifically designed to be used in reverse osmosis systems, including desalination plants. This product is highly effective in preventing calcium carbonate scale formations on membrane surfaces. S-14 RO also effectively controls calcium sulfate, calcium fluoride and metal oxides scale formation. For use on the very expensive membranes in reverse osmosis application, the product has to be approved. S-14 RO has compatibility approvals from membrane manufacturers and also is certified to ANSI/NSF standard 60 for the use in reverse osmosis systems producing potable water.

To be able to cover different conditions of application, software CoRoLa-T was developed. All the customer has to do is provide us with the make-up of his water (it could be fresh water, salt water, recovery water, etc.) and we will log the data into the software and then we will be able to give you the best recommendation.

## New Products



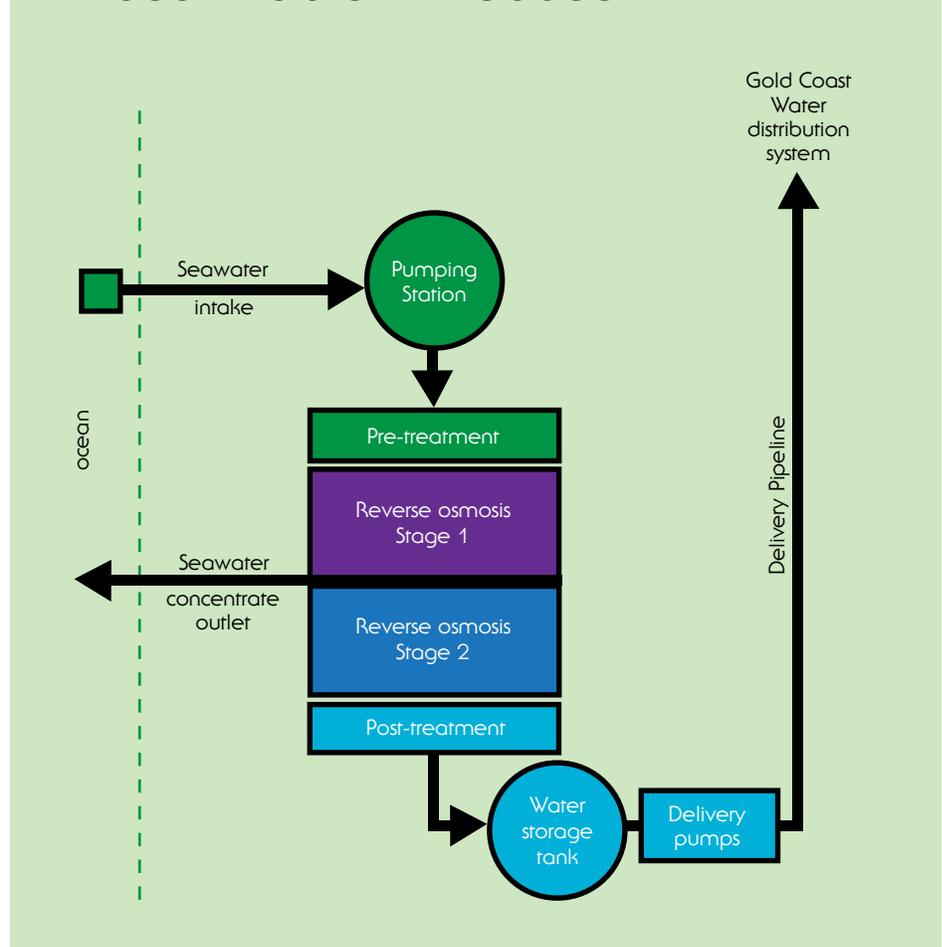
Here is an example of S-14RO concentration determination software.

## Sea Water Reverse Osmosis Desalination Process

### AS-8150

From now on we have the answer to your question: "What is the best, economical inhibitor for potable water"? This product is AS-8150. AS-8150 meets NSF/ANSI standard 60 as tested by NSF for the control of corrosion in municipal waters.

This product is very economical – the initial passivation dose is 1 ppm. AS-8150 is an environmentally safe product which provides multimetall protection and does not promote biogrowth in pipelines



## Products for Hydrotesting / Lay up

We have many different products which are successfully used for the hydrotesting of pipes, tanks and other equipment. The common question is: What product is the best and what kind of protection could be expected after hydrotesting, after the water is discharged from the equipment (lay-up).

To help you get some ideas about these applications we created tables which show concentrations of inhibitors required just for the test and lay-up.

### Fresh Water

Product	Test	Lay-up		
VpCI™-641	500 ppm-800 ppm	.1% wt	Multi-metal	Three months
VpCI™-611	1-2%	20% wt	Ferrous, Aluminum, Galvanized steel	Two Years
VpCI™-609	0.5%	5% wt	Ferrous, Aluminum, Galvanized steel	Two Years
S-69/S-69P VpCI™-649	0.3%	.6-1% wt	Multi-metal	Two Years
VpCI™-377	3-5%	3-5% wt	Multi-metal	Two Years
EcoLine® 3220	Dosage based on area to be protected 1250 ft <sup>2</sup> /gal (30.7m <sup>2</sup> /1)			

\* No Yellow Metal



Here is an example of water blasting pipes using VpCI™-611 to protect the uncoated surfaces.



EcoLine® 3220 provides long lasting vapor corrosion inhibition and is made from renewable materials. Here is EcoLine® 3220 tested in comparison to another commercial product.



S-69 prevents corrosion and pitting in pipelines and can be used as a corrosion inhibitor additive for the majority of water treatment programs.

## Cast Iron/Fresh Water

Product	Test	Lay-up		
		1-3 months	6 - 12 months	12 -24 months
VpCI™-609	1.5-2.5% wt	-	-	-
VpCI™-611	5-7.5% wt	5-7.5% wt	5-7.5% wt	10% wt
VpCI™-417P	.2% wt	.2-.5% wt	.5-1.0% wt	1-2% wt
S-69P	.75% wt	5% wt	5-7% wt	7% wt
M-370	3%	10%	10%	10%
M-640L	2.5%	5%	5%	ND
M-59	2.5%	5%	5%	ND

## Sea (Salt) Water

Product	Test	Lay-up	
		1-3 months	6 - 12 months
VpCI™-644	.3-.5% wt	.75% wt	For longer protection use VpCI™-611 rinse in tap water
VpCI™-645	.75%	.75-1.0% wt	
S-69p	5%	5% wt	5%
VpCI™-611	5%	5% wt	5%
M-645	Dosage based on area to be protected 1250 ft <sup>2</sup> /gal (30.7m <sup>2</sup> /1)		
EcoLine® 3220			

### Andrea Hanson:

AWT(Association of Water Technologies) conference presentation



Andrea Hansen presented Cortec's paper entitled, "The Use of Vapor Phase Corrosion Inhibitors(VpCI™) for Galvanized Steel Protection," at the AWT Conference held in Austin, Texas November 5-8, 2008. This conference is one of the biggest and most prestigious forums in the water-treatment area. A special water-treatment program is required for the corrosion protection of galvanized steel in cooling water systems where a high pH is present in order to maintain the economical life galvanized steel offers for cooling towers other process equipment. The paper discussed electrochemical testing including immersion tests, tafel plots, linear polarization scans, and pilot cooling tower tests performed with Cortec's S-69 product.

## High Performance Coatings:

### VpCI™-395 Water-born Epoxy

VpCI™-396 (Moisture cure urethane) is very effective coating for many applications in which excellent adhesion to metal and perfect protection against corrosion in different severe conditions is required. The only point which can limit the use is VOC restrictions in some countries. Following our ideology – develop as much environmentally friendly products as possible, a new product VpCI™-395 (two part water-reducible epoxy) was developed in addition to VpCI™-396.

When you are preparing for a new application, you can choose between the two products based on the comparison chart to the right:

## New Products

### VpCI™-395 vs. VpCI™-396

	VpCI™-395	VpCI™-396
Applications	same	same
Immersion resistance	excellent	excellent
Long term corrosion resistance	excellent	excellent
VOC	60g/l-120g/l	372g/l
Pot life consideration	yes	no
Real life experience	in application trial	yes

### VpCI™-394 Aliphatic moisture-cure urethane polyurethane top coat

VpCI™-396 is considered a primer. The nature of this moisture cure urethane product is aromatic. It is a very common practice to apply aliphatic moisture cure polyurethane on top of the aromatic primer. This adds many advantages including improved UV durability and gloss retention.

VpCI™-394 is a high solids, aliphatic moisture cure urethane for use on marginally prepared structural steel. It has outstanding outdoor UV protection, barrier protection and flexibility and is suitable for immersed structure when applied over a VpCI CorVerter® and VpCI™-396 primer system. VpCI-394 is a very good top coat for VpCI™-395 as well. This one part product forms a very hard, but flexible coating that cures in the presence of moisture in the air. For best results the curing conditions required are a relative humidity between 20% and 80% with temperatures above 32°F (0°C) and below 120°F (50°C).

We also found that our new product VpCI™-395 is a very good primer for VpCI™-394. It means that VpCI™-394 could be applied on both products: VpCI™-396 and VpCI™-395.



VpCI™-394 is a great application for bridges.

## VpCI™-382: Water-borne polyurethane top coat

## New Products

VpCI™-382 is a water-dilutable top coat designed to be used over various primer, such as VpCI™-374, 375, 395 & 396. The major advantage of this top coat is that it offers excellent adhesion to moisture cured primers and other primers even after they are fully cured. VpCI™-382 has high gloss, extremely low VOC, excellent chemical resistance, and excellent exterior durability when used over a primer. When VpCI™-382 is applied on top of primers, it provides excellent immersion resistance. The biggest advantage of this product is the ability to have any colors desired, including clear coat.

And again we would like to offer you options for top coats: VpCI™-386 (latex-based coating), VpCI™-384 (two part polyurethane-based coating), VpCI™-394 (aliphatic moisture cure polyurethane) and low VOC version – VpCI™-382 (two part waterborne polyurethane-based coating). Depending on conditions and application requirements you can choose what is the best for you.

## VpCI™ CorrVerter®

VpCI CorrVerter® has long been known for its ease of use and rust converting capability. Often reinforcement metal for concrete (rebars) are in locations hard to reach, where costly cleaning procedures would be hard to perform. New independent pull out test results according to ASTM A-994 show that CorrVerter® can be used on rebar without negatively affecting the bond of concrete to rebar. This means repairs can be made to concrete easier than ever.

Corroded #6 rebars were collected from a jobsite. One set was prepared at Cortec Laboratory for testing at American Engineering Testing by being wiped with a damp cloth and allowed to dry for a few minutes. Then approximately 3mil (wet) of VpCI CorrVerter was applied by brush to all surfaces. The other set was left as found. Bars were labeled JG 6 5 40 China. Rib size and spacing were similar on both bar sets.

Applied Load, lbs.	Control	CorrVerter®
	Average, inches	Average, inches
0	0.008	0.008
2000	0.017	0.016
4000	0.024	0.025
6000	0.035	0.038
8000	0.043	0.048
10000	0.056	0.057
12000	0.073	0.066
14000	0.091	0.074
16000	0.110	0.085
18000	0.121	0.092
20000	0.138	0.101
22000	0.159	0.117
24000	<b>Concrete Failed</b>	<b>Concrete Failed</b>

The displacement results indicates that the coatings bond strength of the reinforcing steel coated with VpCI CorrVerter® to the concrete was equal or better than the control.

## Packaging News:

### Desicorr/Desicorr VpCI™ Pouches

These pouches have already been on the market for a while – but only available in one size – 1/6 of unit, and we had many requests for larger pouches. We are proud to announce that we are able to also manufacture these products in 1 and 2 unit sizes. The following sizes will be available:

#### Desicorr Pouches:

1/6 unit, 1 and 2 units

#### Desicorr VpCI™ Pouches:

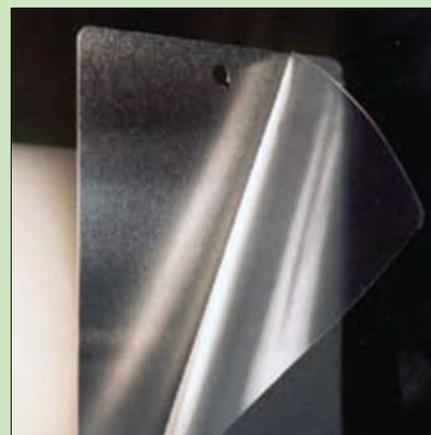
1/6 unit and 1 unit



### Cor-Pak® VpCI™ Masking Film

Our new VpCI™ Masking Film is suitable for use on painted surfaces and on bare metal as well. The advantages of this new film are:

- The only masking film containing VpCI™
- Very high clarity
- Low peel adhesion
- Does not leave a residue when removed from painted and non-painted surfaces
- Very effective in protecting surfaces from dirt
- Very effective in providing mechanical protection
- Uses: protective film, masking tapes, temporary labels, etc.
- Provides multimet corrosion protection



## 2009 Submitted Papers

*MODERN ADVANCES IN ENVIRONMENTALLY FRIENDLY VAPOR-PHASE CORROSION INHIBITING COATINGS:  
EXPANDING THE REALM OF VPCI PACKAGING*

*NOVEL APPROACH TO THE TANK LINING COATINGS*

*EFFECTIVENESS OF CORROSION INHIBITORS FOR THE PETROLEUM INDUSTRY UNDER DIFFERENT FLOW CONDITIONS*

*ANTI-CORROSION BUILDING BLOCKS FOR OPEN RECIRCULATING LOOP COOLING SYSTEMS*

*NEW AIRCRAFT PRETREATMENT AND WASH PRIMER SYSTEM*



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