

# WATER TREATMENT Solutions

Environmentally Safe  
Vapor phase Corrosion Inhibitors



# VpCI® Advantage to Your Formulations

Three level protection—liquid phase, vapor phase, and the interface.

## Enhance Your Product Line with Cortec's Environmentally Sound Additives

Cortec's corrosion inhibiting additives enhance your water treatment product line with VpCI® products suitable for wet or dry lay-up of equipment. Cortec's revolutionary VpCI® technology is an environmentally safe alternative to traditional corrosion inhibitor formulations. Cortec® liquids and powders do not contain nitrites, molybdates, hydrazine, or heavy metals. Each of Cortec's product additives has minimal toxicity for maximum environmental protection.

## Versatile, Continuous Corrosion Inhibitors

Cortec® VpCIs can be formulated into your products to give them temporary, extended, or long term protection capabilities. When your products are enhanced with VpCI® technology they defend against corrosion immediately, even on pre-rusted or scaled surfaces. VpCIs are self-replenishing for uninterrupted protection through direct contact, the interface, and vapor phase.

## Cost-Effective Solutions

Cortec® additives give your products added market value without drastically increasing their cost. Your customers will be able to eliminate expensive alloys, platings, stainless steel, and other corrosion resistant materials simply by purchasing your VpCI® enhanced products.

## Uniquely Formulated Additives for a Broad Range of Industrial Applications

Cortec® researchers and engineers will help you formulate an economical additive suited to the exact chemical specifications of your product line. We use a rigorous assessment, analysis, and testing process to ensure the highest quality and scientific accuracy for your water treatment products applications such as cooling towers, boilers, and condensate lines. Cortec's full range of corrosion inhibiting additives will protect ferrous, non-ferrous and dissimilar metals in water process and piping systems.



## Application:

Use Cortec® S-10 as a boiler treatment to keep steam condensate lines safe from pitting, cavitation-erosion, aggressive scaling, and oxygen corrosion.

Add Cortec® S-69 as a building block to your water treatment formulations to protect cooling tower components.

Use Cortec® VpCI®-617 as a finished boiler formulation to prevent mineral scaling, corrosion, and reduce dissolved oxygen content in low to medium pressure boilers.

Use Cortec® VpCI®-645 for protection in sea and salt water.

Cortec® VpCI®-649 provides long-term protection and is effective as a replacement for nitrite and molybdate based formulations for multi metal and niche applications such as injection molding, closed loops and fire sprinkler systems.

Add M-640/640L to automotive, locomotive, industrial ethylene glycol, propylene glycol, water, and glycol/water cooling systems.

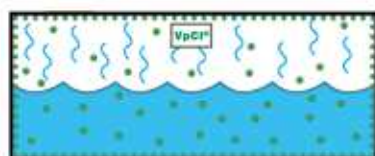
## Many Cortec® products:

- Are environmentally friendly
- Offer complete treatment solutions
- Dissolve completely in water
- Formulate easily
- Protect multimetals
- Require only low dosages
- Remain compatible with most biocides
- Are non-hazardous to ship



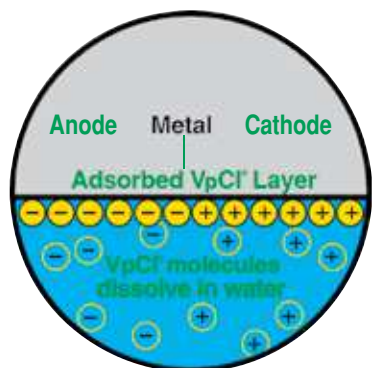
With Cortec® water chemistry, you can replace:

- Nitrites
- Molybdates
- Phosphonates
- Morpholine
- Hydrazine
- Biomates
- Phosphates



vapor-phase interface

liquid phase



**VpCI® technology** is a revolutionary, environmentally safe, and cost-effective option for corrosion protection. Cortec® products protect with a thin, monomolecular protective film. The barrier re-heals and self-replenishes; and can combine with other functional properties for added protective capabilities.

	Product	Description	Applications	Metals Protected	Packaging
Seasonal Lay-Up	Boiler Lizard®	Powder for dry lay-up in premeasured PVA* bags.	Boiler lay-up	Ferrous metals or aluminum	1 water soluble bag per carton, 3.3 lbs. per bag (1.5 kg)
	Closed Loop Toad®	Powder for wet or dry lay-up in premeasured PVA* bags.	Cooling tower system lay-up	Multi-metal	4 water soluble bags per carton, 2.2 lbs. per bag (1 kg)
	Cooling Loop Gator®	Powder for wet or dry lay-up in premeasured PVA* bags.	Cooling tower system lay-up	Multi-metal	4 water soluble bags per carton, 2.2 lbs. per bag (1 kg)
	Cooling Tower Frog®	Powder for dry lay-up in premeasured PVA* bags.	Cooling tower system lay-up	Multi-metal	2 water soluble bags per carton, 4 lbs. per bag (1.8 kg)
Additives	S-69	Organic liquid & powder additives that contain a unique combination of contact and vapor phase inhibitors.	Designed for low level concentration applications	Multi-metal	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	S-69 Powder	Organic powder additive that contains a unique combination of contact and vapor phase inhibitors.	Designed for low level concentration applications	Multi-metal	5 lbs (2.31 kg), 50 lbs (22.7 kg), 100 lbs (45.4 kg)
	G-6	Corrosion inhibitor for copper and copper-based alloys, BTA (Benzotriazole).	Designed for direct treatment, circulating cooling systems, functional fluids, and cleaners	Yellow metals	100 lbs (45.4 kg)
	G-29	Corrosion inhibitor formulation for the protection of copper, brass, bronze, and ferrous metals.	Primarily designed for metalworking fluid formulations. 50% solution of tolytriazole in alkanolamine	Multi-metal	5 gallon (19 liter), 55 gallon, (208 liter)
	M-95	Biodegradable and non-toxic building block for water systems.	Designed for direct treatment, circulating cooling systems, functional fluids, and cleaners	Multi-metal	5 gallon (19 liter), 55 gallon (208 liter), 275 gallon (3.785 liter), and totes
Cooling Water	VpCl®-647	Environmentally safe, water-soluble inhibitor for multi-metals. Effective at low dosages.	Open loop cooling water systems	Multi-metal use	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCl®-649 Liquid	Water-soluble inhibitor for multi-metals. Effective at low dosages.	Closed loop cooling, hot water systems, and fire sprinkling systems	Multi-metal protection	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCl®-649 Powder	Water-soluble inhibitor for multi-metals. Effective at low dosages.	Closed loop cooling, hot water systems, and fire sprinkling systems	Multi-metal protection	5 lbs (2.31 kg), 50 lbs (22.7 kg), 100 lbs (45.4 kg)
	S-14/S-14F	General purpose water treatment antiscalant. Nonflammable and nontoxic. F version for food grade application.	Effective on scale formation on surfaces in contact with water	Multi-metal use	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	S-14 Bio	Combination of biodegradable scale and corrosion inhibitors.	Open loop systems	Multi-metal use	5 lbs (2.3 kg) pails, 50 lbs (22.7 kg) pails, and 100 lbs (45.4 kg) drums
	S-16 Defoamer	Defoamer for aqueous and non-aqueous systems. Specially selected for use in combination with Cortec® water-based and oil-based inhibiting systems. Stable under both acidic and basic conditions.	Applications where foaming is a concern	Multi-metal use	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
Boiler Water	S-7 Oxygen Scavenger	Oxygen scavenger designed to protect boiler systems against oxygen corrosion (hydrazine-free).	Low-medium pressure boilers	Multi-metal protection	5 lb. (2.3 kg), 50 lb. (23 kg), 100 lb. (45 kg)
	S-10/S-10F Corrosion Inhibitor	Corrosion inhibitors for steam condensate lines in boiler systems. S-10F has FDA approved ingredients.	Boiler condensate lines	Multi-metal protection	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	S-15	Total replacement for hydrazine programs in medium to high pressure boilers.	Medium-high pressure boilers	Multi-metal protection	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCl®-615	Phosphonate based corrosion inhibitor for boiler water systems.	Low-medium pressure boilers	Ferrous metals, aluminum alloys and galvanized steel	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk.
	VpCl®-617	Water-soluble, provides long-term protection against corrosion and scale formation. USDA approved liquid.	Suitable for low to medium pressure boilers	Steel and copper	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk.

PVA\*: Polyvinyl Alcohol

	Product	Description	Applications	Metals Protected	Packaging
Engine Coolant	M-640 Powder and M-640 L (Liquid)	Corrosion inhibiting additive for water and ethylene glycol-based, heat exchanger fluids.	Add to antifreeze/coolant fluids	Multi-metal	5 gallon (19 liter), 55 gallon (208 liter) totes, and bulk
	VpCI® Coolant Antifreeze	Ready to use coolant-antifreeze.	Inhibited heat transfer fluid	Multi-metal	5 gallon (19 liter), 55 gallon (208 liter) totes, and bulk
Hydrotesting Fluid Additives	VpCI-609® Powder	Powder that can be pre-dissolved in fresh water.	Fresh water	Ferrous metals, aluminum, and alloys	5 lbs. (2.3kg), 50 lbs. (23kg), and 100 lbs. (45kg) moisture barrier bags packed in fiber-lined drums
	VpCI®-611	Water-based rust preventive concentrate. Leaves a very thin, transparent, tack free film on the metal surface. Weldable and paintable film is non-toxic, pro-environmental, and contains no nitrite or phosphate inhibitors.	For water blasting or wet abrasive blasting in fresh water.	Aluminum, carbon steel, mild steel, stainless steel, and other ferrous metals	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCI®-641	Water-based rust preventative for the protection of ferrous or non-ferrous metals in industrial waters.	Fresh water cooling systems and hydrotesting	Ferrous and non-ferrous metals	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCI™-649	Water-based rust preventative for the protection of ferrous or non-ferrous metals in industrial waters.	Fresh water cooling systems and hydrotesting	Ferrous and non-ferrous metals	5 gallon (19 liter) 55 gallon (208 liter), totes and bulk
Brine/Salt Water Additives	M-605 series	A non-toxic, environmentally friendly corrosion inhibitor designed specifically as a de-icing salt additive to prevent corrosion due to chlorides.	Additive for deicing salts, and brine systems	Ferrous and non-ferrous metals	5 lb. (2.3 kg), 50 lb. (23 kg), and 100 lb. (45 kg) lined drums
	M-645 Float Coat	Corrosion inhibiting additive to salt waters and brine.	Ballast tanks, hydrotesting, salt water protection	Ferrous and non-ferrous metals	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCI®-644	Corrosion inhibiting additive for water containing inorganic salts, including chlorides.	Cooling/heating systems, hydrotesting applications	Ferrous and non-ferrous metals	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
	VpCI®-645 Marine Use Corrosion Inhibitor	A non-toxic, biodegradable concentrate designed to provide long-term effectiveness in fresh water, salt water, brine, and other highly corrosive solutions containing dissolved sulfide and halogens.	Fresh water, salt water, brine, and other highly corrosive solutions containing dissolved sulfide and halogens	Ferrous and non-ferrous metals	5 gallon (19 liter), 55 gallon (208 liter), totes, and bulk
Other Additives	BioClean 610	A coconut oil-based product designed for the dispersion and preservation against microbiological growth in water treatment applications.	Microbiological plagued systems	Multi-metal	5 gallon (19 Liter), 55 gallon (208 Liter), liquid totes, and, bulk
	BioClean 612	An aliphatic amide based organic penetrating agent and organic deposit dispersant for use in industrial applications.	Microbiological plagued systems	Multi-metal	5 gallon (19 Liter) and 55 gallon (208 Liter)

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