

VCI POWDERS FOR
CORROSION
PREVENTION ARE
IDEAL FOR SHORT
TERM LAY UP AND
LONG TERM CORROSION
PROTECTION OF TANKS,
COOLING TOWERS, VESSELS
AND ENCLOSED SPACES



Vci powders can also be used in water for

- Hydro Static Testing and test stands including cast iron
- A flush through application of corrosion inhibitors
- A final rinse additive for corrosion control in production lines cleaning and protecting metal parts

Ideal for hard to reach areas and the protection of:

- Tanks
- Pipes
- Lay Up of Plant & Equipment
- Lay up of cooling towers
- Preservation of boilers, tubes and condensers
- Protection of metal parts and equipment inside any enclosed container

* Additive to shot blast, hydro test and metalworking solutions for corrosion control *

*VCI POWDER AND CORROSION PROTECTION
SELECTION HELP [CLICK HERE FOR AN ONLINE
EVALUATION](#)*

Corrosion Protection VCI Powder Features:

- Corrosion protection in the contact and vapor phase
- Vapor Corrosion Inhibitor (VCI) provides a component that is attracted to all metal surfaces and forms a molecular barrier that provides protection from rust and corrosion
- Nitrite, Silica and heavy metals free
- Environmentally Friendly
- Non-hazardous
- Easy to Use
- Economical

Choose from the following types of VCI corrosion control powders available in 5 pound, 50 pound or 100 pound quantities:

VCI-1 Powder

- Corrosion protection for ferrous metals and aluminum
- Apply by dry fogging, spray solution or sprinkling
- Use as a hydrotesting additive to water @ ½ to 2 % percent by weight
- Great for preservation of plant, cooling towers and equipment
- 100% biodegradable and non-hazardous

VCI Powder 1010

- Provides continuous long and short-term corrosion protection for ferrous metals and is compatible with copper, brass, zinc and galvanized steel
- Water soluble up to 10 % in water by weight
- Includes all of the features of VCI Powder 1 and is also compatible with non-ferrous metals

Distributed by:



KPR ADCOR INC.
"We Stop Rust!"™
New York Chicago Ontario

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Click here to fill out our corrosion control evaluation form to help you determine the best method of corrosion control for your project.

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PRODUCT DATA SHEET

VCI-1 Powder

December 2011

Product Description

VCI-1 Powder is a special water-soluble formulation of Volatile Corrosion Inhibitors that is supplied as a white crystalline powder. It is used to control corrosion of all ferrous metals and aluminum metals. **VCI-1 Powder** is applied using either a wet or dry application technique. This formulation is especially effective way of protecting ferrous and aluminum metals from corrosion due to adverse environmental conditions such as high heat and humidity, seawater or other harsh environments.

Corrosion Inhibiting Properties – VCI Powder –1 is especially formulated to protect ferrous and aluminum metals from corrosion. It is applied as either a wet treatment (in solution) or dry treatment (blown powder or sprinkling). This material does not remedy any existing corrosion damage, but will slow and/or stop further corrosion.

- **Water based**—Non-flammable, safe-handling characteristics. Low odor.
- **Liquid and Vapor Phase Protection** When used in hydrostatic testing the product provides protection in liquids and above liquid levels.
- **Hydrostatic testing** – Especially recommended to protect equipment and materials during and after hydrostatic testing.
- **Protection of recessed and hard to reach areas.** Complicated valves and the interior surfaces of piping and equipment, which are often difficult or impossible to reach, are protected with true Vapor Corrosion Inhibitor action.
- **Ease of application** - **VCI Powder –1** can be applied by either blowing or sprinkling of powder or flushing area with a solution. May be used as a Hydrotest solution.
- **Water Soluble** – 15% at Room temperature (72 °F – 22°C)
- **2 year Protection** – Protected surfaces should be inspected, whenever possible, after 1st 6 months period to insure protection. The product will protect metal surfaces for 24 months..
- **Ease of Removal**– The product can be easily removed by flushing with water or blowing with air.
- **Biodegradable** – The product is 100% biodegradable.
- **Large Area Protection** – The economical protection of large tanks, vessels or other manufacturing equipment is easily obtained. The product can be added to standing water.

Application Procedures.

- **Powder Application** For average conditions the recommended dosage is 0.30 ounces (weight) per cubic foot (28 Liters) of enclosed space.(300 g/cubic meter) Concentration can be increased to protect metals under more severe conditions. Powder is applied and then the treated area is closed or sealed.
- **Solution Application** For average conditions the recommended dosage as a solution is a 0.25% in water (based upon weight). This solution is recommended as a hydrostatic test fluid. Concentration can be increased to protect metals under more severe conditions. The treated area is then closed or sealed.

Typical properties:

VCI-1 Powder

Specific gravity:	1.26 @ 77°F
Appearance:	White Crystalline Powder
Melting Point	388 ⁰ F (198 ⁰ C).
Shelf Life	24 months minimum
PH	6-7 (1% aqueous solution)

Shipping and Storage Containers.

VCI-1 Powder is available in a double lined box or poly lined fiber drums: 50 pounds (22.7 Kg) and 100 pound drums

The suggested shelf life of this product is two (2) years in its original container.

Suggested Storage Conditions.

VCI-1 Powder should be stored at temperatures above 32F (0C).

LIMITED WARRANTY

All technical information, technical data, statements and recommendations contained in this literature are based upon laboratory tests and/or are obtained from sources believed to be reliable. It is offered solely for your consideration, investigation and verification.

Manufacturer warrants its products to be free from any defects when it is shipped to a customer. Under this warranty the company obligation is limited to replacement of a product if it proves to be defective.

The customer's responsibility is to determine the suitability of this product by reading the label and literature and performing sufficient tests to determine the suitability of this product.

Manufacturer and suppliers shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the product.

VCI Powder 1010



Product Description

VCI Powder 1010 is a water soluble, silica-free volatile corrosion inhibitor (VCI) designed to protect the interior metal surfaces of enclosed systems, such as boilers, tanks, turbines, heat exchangers and steam or condensate pipelines. This is particularly useful during extended periods of equipment inactivity including storage or lay-up or during and after hydrostatic testing. The chemical formulation provides continuous long and short-term corrosion protection for ferrous metals and is compatible with copper, brass and zinc galvanized steel. This specially engineered VCI powder prevents corrosion on metal surfaces in vapor and contact phases. The volatile component is attracted to the metal surface in the vapor phase and forms a molecular barrier. The molecular barrier provides protection against oxidation and protects even the most difficult to reach recesses.

VCI Powder 1010 can be applied dry or wet using a variety of easy-to-use application methods. Prescribed doses can be introduced into the system in powder form by manually dusting, fogging into enclosed spaces with a low-pressure air hose or by simply dissolving the powder in water. The powder does not contain environmentally harmful chemicals like phosphates, heavy metals or nitrites. It replaces hydrocarbon and solvent-based liquids, nitrogen blankets, desiccants and other less dependable or costly preservation alternatives.

VCI Powder 1010 typically does not require any special surface preparation prior to equipment shut-down and does not need to be removed prior to start-up. The system does not need to be re-charged or actively maintained during the lay-up period. If the VCI layer on the metal surface is disturbed it reapplies instantaneously before corrosion can begin.

Typical Properties

Appearance:	Free-flowing off white powder
Solubility:	Soluble in water, up to 10g/100mL @ 25°C
pH:	6-9 (@10% aqueous solution)
Melting point:	>90°C
Flash point:	Not Determined
Odor:	Slight ammonia odor

Packaging and Storage

VCI Powder 1010 is available in conveniently sized 5 lb. boxes, 25 lb. boxes, and 150 lb. drums.

Store powder in a tightly sealed container.

Applications

VCI Powder 1010 can be used to:

- Preserve or lay-up boilers, either wet or dry.
- Protect internal surfaces of compressors, turbines, engines, tanks, heat exchangers, pipe systems.
- Protect steam lines, condensate returns, heating and cooling systems.
- Preserve tubes, pipes and vessels.
- Preserve equipment and pipe systems that need to undergo hydrostatic testing prior to shipping and or storage.

Application Instructions

Surface Preparation

Remove dirt, oil, grease and loose rust according to job specifications.

Dry Application

VCI Powder 1010 can be applied to boilers, heat exchangers, piping and other liquid containment or conveyance systems by fogging the dry powder into voids in the system using a low-pressure air hose. This is particularly effective when there are deep recesses in system's interior. Loose powder can also be sprinkled or dusted into the interior where access is available.

When using the dry powder, add 1 lb. of VCI Powder 1010 per 50 ft³ of system volume. (0.32 oz per cubic foot)

Wet Application

When applying the powder in an aqueous solution, add 0.5 to 1.0 weight percent VCI Powder 1010 to water. Close all external openings to properly contain the VCI.

Product is available in a liquid ready to use formulation.

Typical Spray Set Up

Conventional: Binks 18 gun with 66/S tip/air-cap.
Airless spray: Grayco 205-591 Bulldog, .015" tip, 1700-1900 psi, 3/8" ID hose.
Equivalent equipment is acceptable.

For hydrostatic testing, add VCI Powder 1010 to the hydrostatic test water at a ratio of **0.5 TO 1 % BY WEIGHT**. It is not necessary to dry the vessel after hydrostatic testing, but it should be sealed. This should give protection for up to 6 months. If long-term protection is needed, increase the concentration OF inhibitor to water.

Removal

VCI Powder 1010 does not typically need to be removed. There is no build up because the powder is completely water-soluble and the powder is 100% silica-free. However, if complete removal is desired then simply flush the system with water.

Shelf Life

The suggested shelf of VCI Powder 1010 is two years in its original container.

The data, statements and recommendations in this product information sheet are based on testing, research and other development work, which has been supplied, and we believe such data, statements and recommendations will serve as reliable guidelines. Physical properties shown above represent typical values and are not intended for use in writing specifications. However, this product is subject to numerous uses under varying conditions over which we have no control, and accordingly, we do NOT warrant that this product is suitable for any particular use. Users are advised to test the product in advance to make certain it is suitable for their particular production conditions and use. All products manufactured by us are warranted to be first class material and free from defects in material and workmanship. Liability under this warranty is limited to the net purchase price of any such products proven defective or, at our option, to the repair or replacement of said products upon their return to us transportation prepaid. All claims on defective products must be made in writing within 30 days after the receipt of such products in your plant and prior to further processing or combining with other material and products.

WE MAKE NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE SUITABILITY OF ANY OF OUR PRODUCTS FOR ANY PARTICULAR USE, AND WE SHALL NOT BE SUBJECT TO LIABILITY FROM ANY DAMAGES RESULTING FROM THEIR USE IN OPERATIONS NOT UNDER OUR DIRECT CONTROL.

THIS WARRANTY IS EXCLUSIVE OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NO REPRESENTATIVE OF OURS OR ANY OTHER PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF OUR PRODUCTS

VAPPRO[®]

V.C.I. CORROSION INHIBITOR

Magna Chemical VCI Powder
Distributed by: Kpr Adcor Inc
'We Stop Rust! TM'
USA & Canada Toll Free 1-866-577-2326
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Corrosion Control Metal Protection

PRODUCT INFORMATION

VAPPRO 848 Multi-Metal VCI POWDER

NATO STOCK NUMBER: 6850-32-076-1099
MIL I-22110C

DESCRIPTION

Vapro 848 is a unique formulation Vapour Corrosion Inhibitor Powder for dry corrosion protection of metals in recessed areas, interior cavities and voids.

Vapro 848 has found considerable application as a corrosion inhibitor in low concentrations and is effective in protecting multi-metals from corrosion. It does not contain chromates or nitrites. It is easy to apply and remove by air gun or water.



FEATURES	ADDITIONAL BENEFITS
<ul style="list-style-type: none">* Nitrites-free and does not contain Chromates* Easy to apply* Multi-metal protection* Provides mono-molecular inhibiting layer* Non-toxic	<ul style="list-style-type: none">* Long term protection* Protected products can be shipped to customers without removing powder* Easy removal: powder can be removed by air gun or water when applied as a powder* Little or no surface preparation required

The details of our products are given completely free of undertaking. Since their application lies outside our control, we cannot accept any liability for the results. Users shall determine the suitability of the product for its intended use, and user assumes all risk and liabilities whatsoever in connection therewith.

AREA OF USE

- * **Vapro 848** powder is used for dry protection of internal cavities and voids that can be covered or closed after application.
- * For protection of tubular structures, pipes, heat exchangers, tanks, vessels etc.
- * For protection of equipment after hydrostatic testing.
- * For protection of closed circuit cooling systems- dry lay-up.
- * For protection of parts, components and completed assemblies during storage and shipping.

METHOD OF APPLICATION

- * Apply powder by dusting, fogging or sprinkling. After application, cover, seal or close the interior cavity or void.
- * Fogging can be achieved by using an air-compressor.
- * When dissolved in water, it can be used as a liquid phase inhibitor.

PHYSICAL PROPERTIES

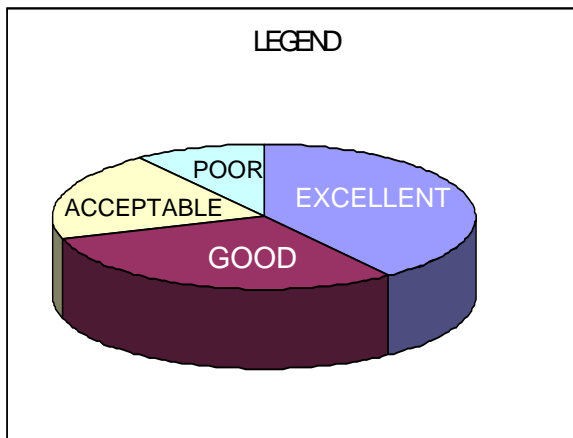
Form	Powder
Appearance	White Powder
Melting Point	170°C
Alkalinity (as NaOH)	Not more than 0.04% as NaOH
Water	Not more than 1.5%

METALS

Mild Steel, Wrought Iron
 Copper
 Cast Iron, Flake or Ductile
 Aluminum Alloys
 Zinc
 Magnesium Alloys
 Brass (30% Zn)
 Cadmium
 Silver
 Copper-Nickel Alloys
 Stainless Steel
 Solder
 Galvanized Steel
 Aluminized Steel



LEGEND



Magna Chemical Multi-Metal VCI Powder
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VAPPRO®

V.C.I. CORROSION INHIBITOR

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Corrosion Control

PRODUCT INFORMATION

VAPPRO 841

**ODOURLESS V.C.I. POWDER
FOR HYDROTESTING**

DESCRIPTION



Vapro 841 is an odorless VCI powder specially developed to inhibit both ferrous and non-ferrous metals from corrosion after hydro-test. It eliminates formation of corrosion due to residual water after draining hydro-test water. **Vapro 841** eliminates the need to force dry the piping system after pressure testing and flushing. Reduces downtime caused by formation

of corrosion in piping system which can result in seized valves, blocked pipe-work and potential damage to downstream process equipment.

Vapro 841 is also an excellent product for dry corrosion protection of metals in recessed areas, interior cavities and voids.



BENEFITS

- * Non-toxic.
- * Easy to apply.
- * Multi-metal protection.
- * Does not contain chromates and heavy metals.
- * Does not contain ODS (Ozone Depleting System).
- * Little or no surface preparation required.
- * Protected products can be shipped to customer without removing of water or powder for dry corrosion protection of metals.
- * Nitrite free.
- * Biodegradable.
- * Environmental friendly.
- * Eliminates formation of corrosion due to residual water.

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TYPICAL APPLICATIONS

- * Process pipe-work and vessels.
- * Tanks, casing, pumps, valves.
- * Tubular, structures, Boiler Pipe work.
- * Heat exchangers, chillers, boiler water @ 0.25 to 0.75 % by Weight
- * Additive to standing water.
- * Hydro-blasting, hydrostatic testing.

PROCEDURE FOR INCORPORATING 841 VCI POWDER INTO HYDROTEST WATER.

- * Calculate the volume of the system to be hydrostatically pressure tested.
- * Add **Vapro 841** VCI Powder to test water at a rate of 0.5% to 2% by weight depending on the humidity and salinity of the environment.
- * Agitate the mixture for even dispersion.
- * Carry out pressure test.
- * Drain down system and seal all vents.

PROCEDURE FOR DRY CORROSION PROTECTION OF TUBULARS

- * Protects up to 1 cu ft (28 litres) per 30 grams of powder.
- * Calculate the volume of the structure to be preserved. By means of a spray gun, fog the desired amount of **Vapro 841** and seal all vents.

TYPICAL PROPERTIES

Form	Powder
Appearance	White Powder
Solubility In Water	Appreciable (55 grams in 100 grams at 20°C)
Density	45 – 50 lbs / cu.ft
Odour	Odourless
Special Labeling	None
PH	7 (1% aqueous solution)

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