CorrosionCOPS
When it's Rust Call US!

CarWell use on Metals

CarWell Rust COP, T-32, CP-90 Thin Film Corrosion Inhibitor (all the same product) is a petroleum based hydro-carbon that is chemically remediated of all HAZMAT. The inhibitors in CarWell are a trade secret inhibitor.

Tests performed by the U.S. Army Tank and Automotive Command found a 90 – 92% ability to slow the corrosion rate, and U.S. Naval Surface Warfare Center tests have found a 95% ability to slow corrosion rates. These tests were conducted in lab and field.

Both test results represent a very high degree of corrosion rate reduction and because of this performance CarWell is the only product at this time accepted for use by the U.S. Army and the U.S. Marine Corp worldwide for use on ground force tactical equipment.

Here in Hawaii since April 01 over 70,000 applications at Schofield Barracks, and well over 20,000 applications at Marine Base Hawaii, Kaneohe have been and are being performed to all wheeled and tracked tactical fleet on an ongoing application process.

Civilian sector use is not limited to just fleets, but applications are being performed on aircraft, cooling tower chassis and components, air conditioning systems, metal structures, shipping containers, wrought iron fences, garage door mechanisms, weapons, duct works, steel doors and frames, process plant equipment, such as concrete block manufacture and anywhere in general where corrosion issues force delay, down time and steel waste that ends up needing replacement and with ultimate cost and time factors involved.

Application of CarWell is a simple process. Be sure metal treatment area is free of dirt and mud buildup. This can be removed by high pressure washing or garden hose flushing with fresh water.

Removing rust scale, peeling paints and other corrosion by products such as white rust on galvanized or aluminum surfaces is not required.

Apply by roller, brush or spray and allow residual product to soak into the metals. If heavy scale is present, a second treatment might be desired after about a week of saturation. This enables more CarWell to be absorbed into the good metal substrate below the rust/oxide scale, and that is where the protection is needed the most. If a second treatment within a week is not possible where heavy rust and scale is present, follow up treatment should be performed at no longer than 8 months after the first treatment.

Typically, Hawaii climate shows that second over-all treatment at 8 months should occur, and thereafter 9 month, 10 month and finally 12 month treatments from each treatment date over a 39 month schedule. This schedule of treatments at each treatment date will afford saturation to the metal molecular structure, allowing build up at this level, and a constant supply of inhibitor to slow the rate of corrosion.

With the above schedule, CarWell treatments are not a one-time treatment, but planned interval treatments for best performance, as CarWell life-cycle is about 12 months. To insure best protection and performance, it is recommend to follow up with the 12 month treatment cycle as stated if the 39 month schedule is difficult or not possible to follow. The military tests reflect high degree of corrosion control based on their findings with tests at annual application interval.

Metal viewed at the molecular level or through a high resolution microscope, is similar to the construction of a sponge. The surface appears flat to the naked eye, but up close metal is porous.

Continued page 2

Within the porosity of metal, moisture accumulation occurs by condensation, immersion, rainfall or people washing or sprinkling water. Condensation is a constant cycle, occurs due to the rise and drop of temperature of the atmosphere– night and day, which causes metal to sweat.

Once moisture is present, the three (3) ingredients to cause corrosion are now present - metal, oxygen and water cause a charged corrosion cell. The charged corrosion cell is within the metal, where the anode (+) and cathode (-) are present. The anode and cathode are the different raw metals that are combined under heat to produce the final product of steel, or the + (positive) and the – (negative) pole within that final product known as steel or finished metals.

With the presence of water or the electrolyte, most typically rainfall, our Hawaiian environment has the presence of chlorides or salt from the ocean and sulfuric dioxides from the volcano which when in contact with water creates a solution of sulfuric acid. Combined, the solution or electrolyte becomes a super charge electrolyte causing rapid destruction to metal.

When the electrolyte contacts metal, electrolysis occurs. Electrolysis is the flow of electricity from one pole (+) to the other pole (-). In the case of corrosion think about a battery that has a positive/negative pole. In this case, the different metals combined when produced under the duress of heat and are combined while molten or in the metals liquid state. The combination of the metals when cooled creates a resistance which then is the battery or charged corrosion cell, the electrolyte is the solution or path of which the flow of electrons flows over, and the spent energy leaves behind rust and corrosion deposits as this energy is being consumed in the corrosion process.

Metals produced with hotter temperatures tends to rust and corrode faster than metals produced under cooler temperatures. Denser metals tend to slow the corrosion rate, such as 18-8 stainless steel. Regardless of which metals or combination of metals are used, CarWell works well to slow the corrosion rate.

When metals are treated with CarWell, the inhibitor insulates the metal molecules from each other and from moisture, and the result is the slowing of the rate of corrosion. Some corrosion still does occur, but that rate is a very slow rate, which means to an equipment owner that the designed life cycle can be met without the frustrations of loss due to corrosion.

CarWell treated surfaces can be top coated with petroleum and water based coatings with ease. Simply allow CarWell to be absorbed to the metal substrate (about 24 hours) and degrease with an environmentally accepted degreasing agent. Do not use Simple Green, as Simple Green will cause more corrosion problems over time.

If an appropriate cleaner degreaser cannot be found, we recommend BULLFROG Cleaner Degreaser with vapor phase corrosion inhibitors, or CORTEC VpCI 400 series cleaners which are available in powder or liquid concentrate. Please contact us for more information at Corrosion COPS 808-676-1963 for these specific cleaning agents.

Allow degreased surfaces to dry, and apply desired coatings.

DuPont Labs has performed tests which reported no issue with adherence with surfaces treated with CarWell CP-90 and properly degreased.

From cooling tower chassis and components, air conditioning systems, metal structures, shipping containers, wrought iron fences, garage door mechanisms, weapons, duct works, steel doors and frames, process plant equipment, external radiators, battery boxes, chassis, interior door, fold, weld seam areas and to locks CarWell is the right choice for the job of fighting corrosion.