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## **855-B Flash Rust Protection Additive**

**To:** Customer

**From:** Cortec Laboratories, Inc.  
4119 White Bear Parkway  
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**cc:** Boris Miksic  
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**Project #:** 18-017-1325.bis

**Results reported by:**

A handwritten signature in black ink, appearing to read "Ben Voight".

Ben Voight  
Process & Technical Service Engineer

**Approved by:**

A handwritten signature in blue ink, appearing to read "John Wulterkens".

John Wulterkens  
Technical Service Engineer



**Background:**

The customer manufactures a variety of bearings, metal parts, and other components for a variety of OEMs. They are currently having flash corrosion problems after machined metal parts are deburred and removed from their tumbling machine. The customer provided a piece of metal machined from raw material and deburred in a tumbling machine, and a sample of the solution used, 855-B finishing solution produced by Giant Finishing.

855-B claims to provide flash rust protection, however the customer is still experiencing flash rust within half an hour of removing metal parts from the tumbler operation. The customer is interested if any Cortec additives can be used to provide flash rust protection for up to 48 hours. The customer is looking for an additive that can be used with the 855-B solution, if possible, or other Cortec products that can be used to provide the necessary protection.

**Sample Received:**

855-B Burnishing compound (clear color, no visible contaminants)  
Metal piece (moderate corrosion)  
Received 1/27/2018

**Materials:**

VpCI-414 – #188717  
M-95 – #080917  
Cast iron panels

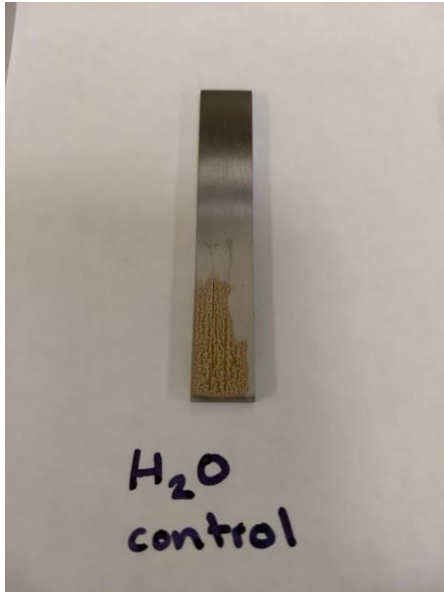
**Procedure:**

Cast iron panels were cleaned via 240 grit sandpaper and rinsed in methanol. Solutions of 855-B, 10% VpCI-414 in water, and 1% and 1.5% M-95 in 855-B were made. Panels were dipped into solutions briefly, and set out to dry. One panel was dipped into tap water as a control.

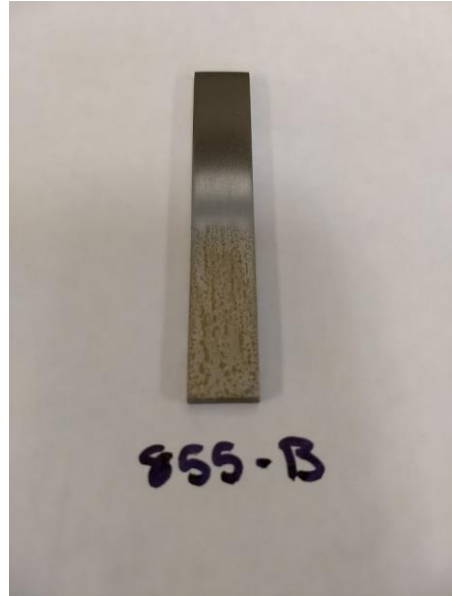
Panels were checked for rust in the first 5 minutes after dipping. 30 minutes after. 2 hours after, 24 hours, and 48 hours.

**Results:**

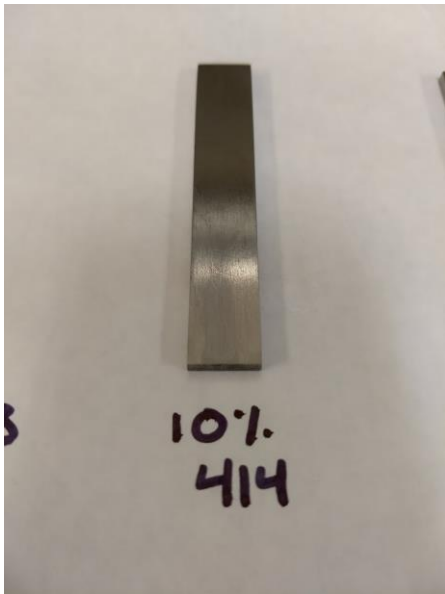
Flash rusting was observed within a few minutes in the control solution, and 855-B solution. Moderate corrosion protection was observed in solutions containing M-95. Excellent protection was observed from the solution containing 10% VpCl-414. Photos were taken 2 hours after dipping panels in samples. No observable change from 2 to 48 hours.



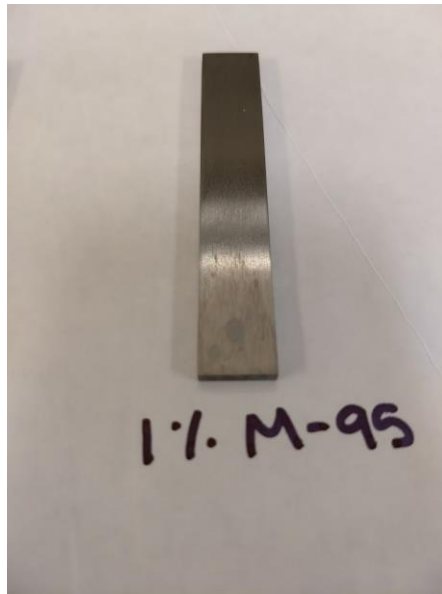
Control 48 hours after testing



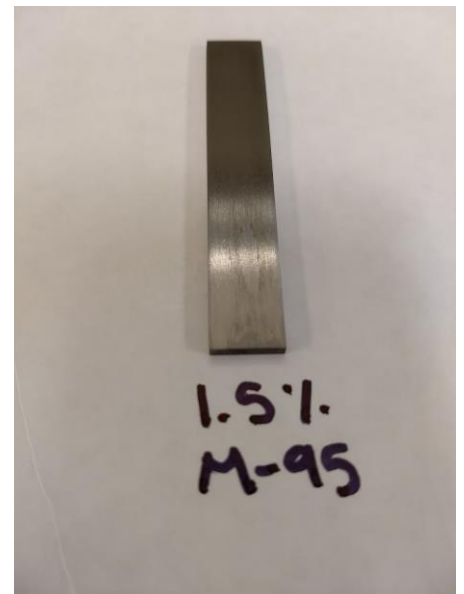
855-B solution 48 hours after testing



VpCl-414 solution



1% M-95 in 855-B



1.5% M-95 in 855-B

**Interpretations:**

855-B alone seemed to provide minimal, if any, flash rust protection when compared to the control sample. Two Cortec products were tested, VpCI-414 and M-95. A 10% solution of VpCI-414 in water provided the best protection from the samples tested. M-95 at 1.5%-2% also provided excellent flash rust protection. In the picture of 1% M-95, minor staining can be seen on the bottom third of the panel, while at 1.5% M-95 and 10% VpCI-414 this staining is not present.

If VpCI-414 is selected, another cleaning step will be added to the cleaning process. VpCI-414 is an alkaline, water-based cleaner, so after dipping materials in the 855-B solution, materials should also be dipped in a VpCI-414 solution. Information regarding maintenance of this solution can be found on the PDS.

If M-95 solution is chosen, no extra steps will need to be added to the cleaning process. M-95 worked very well in the 855-B solution at 1.5%. When there is a changeover of 855-B solution, more M-95 should be added to keep the concentration at 1.5%