

Removing Rust Provides Usable Inventory for Manufacturer of Mower Blades

The Challenge

Whenever a manufacturer in the agriculture industry runs into a backlog of specific parts for a lawn maintenance device, they often need to store those parts before moving them to the next step. Unfortunately, the parts will sometimes rust and discolor while waiting for either further processing or shipment. Environments such as high humidity and acid fumes that are present in many metal finishing applications can quickly cause flash rust or oxidation on the surface of the parts. This creates issues for the manufacturer, who will require further processing of the parts such as coating processes or simply providing parts in sellable condition.

The Approach

This particular manufacturer previously de-rusted the affected parts on its coating line, using its hydrochloric acid tank and shutting down all processing while the rusted parts went through the finishing process. This process did effectively de-rust the parts but at the cost of decreases in line throughput, along with contributing to further rusting of parts and plant equipment because of the fuming acid being used.

The Hubbard-Hall team introduced the idea of removing the flash rust using a non-acid-based de-ruster and sent several of the rusted parts to its new pilot line in South Carolina for testing. It was determined that the Emerald Deruster PH 7 could clean the affected parts in about 20 minutes at 120F and possibly faster if the tank could be heated to 140F.

Executive Summary

Hubbard-Hall's Emerald Deruster PH 7 solution helped a manufacturer overcome rust issues, with the following key outcomes:

- A prolonged inventory backlog began to rust, causing issues with production when finishing the parts.
- The manufacturer was able to quickly and easily remove the flash rust by using Hubbard-Hall's Emerald Deruster PH 7.
- A hydrochloric acid tank was eliminated, which reduced potential fumes and improved worker safety.

Emerald Deruster PH 7 is an aqueous neutral solution designed to be used in dip or immersion tanks or with pressure washers. When used at full strength, it will remove all the rust from steel and iron and will brighten copper and copper-based alloys at room temperature within 15 minutes to 24 hours (in extreme cases). Faster effectiveness may be achieved through heating. Emerald Deruster PH 7 is non-flammable, non-toxic and non-hazardous, environmentally safe and biodegradable. No special equipment besides safety glasses and gloves is required. The product can be used several times until it stops working. On average, a gallon will de-rust up to 400 pounds of light-rusted steel.

The Outcome

The manufacturer elected to install the Emerald De-Rust PH 7 in-line, which is a little unusual, but most effective for them. Using dip or immersion tanks or pressure washing is just as effective and more applicable for most production areas. The considerable backlog of parts was processed easily and quickly, and the old hydrochloric acid tank was eliminated, reducing the potential for fumes to accelerate rust on stored parts.

Hubbard-Hall's Andre' Depew said the previous way of finishing the parts after rusting was time-consuming and expensive from a production standpoint.

"They had to manually rack the parts, run them through the pickle line, manually unrack them, and put them back into storage just to eliminate the flash rust," he said. "The new system with Emerald Deruster PH 7 eliminates many of those steps and eliminates a hazardous chemical tank which improves air quality and worker safety."

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Andre Depew
Hubbard-Hall

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563 South Leonard Street, Waterbury, CT 06708
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