



**PHOSPHATIZER  
WASH**



Phosphoric acid is commonly used to pretreat metal surfaces in a process known as phosphating or passivation. This process is crucial for enhancing the metal's resistance to corrosion and improving the adhesion of subsequent coatings like paint or primer.

## THE PROCESS

### CLEANING AND DEGREASING

Before applying phosphoric acid, the metal surface is thoroughly cleaned and degreased to remove oils, dirt, and other contaminants that might interfere with the treatment.

### PHOSPHORIC ACID APPLICATION

The cleaned metal is treated with a phosphoric acid solution. This can be done through immersion, spraying, or brushing, depending on the specific application and size of the metal part.

### FORMATION OF A PROTECTIVE LAYER

The acid reacts with the metal surface to form a layer of metal phosphate. This layer provides strong corrosion protection for the remaining metal beneath the surface and provides an excellent base for further coating adhesion.

### RINSING AND DRYING

After the phosphate layer has formed, the metal is typically rinsed with reverse osmosis (RO) or distilled water to remove any excess acid and avoid re-contaminating the surface with anything that could impact the coating performance. The metal is then dried to prep for coating.

## USES

This pretreatment is commonly used in automotive, aerospace, and manufacturing industries to protect metal parts from rust and ensure long-lasting coatings.

**WASTE GENERATION & CHEMICAL USE REDUCTION**

**80%**

**95%**

**HAULING EXPENSE REDUCTION**



## THE SOLUTION

### RECYCLING PHOSPHORIC ACID SOLUTION

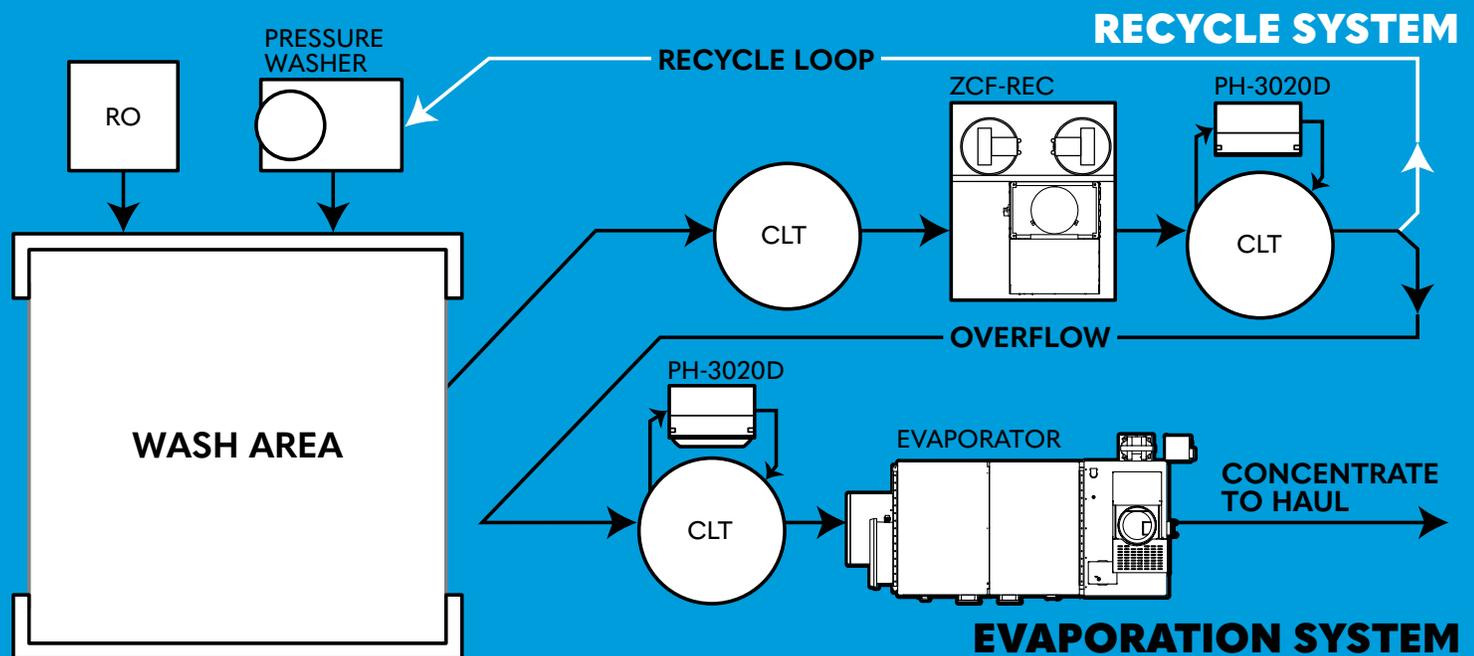
Disposing of phosphoric acid solution can be challenging due to its low pH and the presence of dissolved metals. As a result, processors often opt to transport the waste to avoid the risk of failing to meet regulatory compliance requirements for discharging waste solution down the drain. Transporting this water can be quite costly, which creates incentive for processors to find ways to reuse the acid solution for as long as possible. By using a Water Maze Phosphate Recycle System, processors can reduce water usage by 80% compared to a standard pass-through setup.

### EVAPORATING WASTE SOLUTION

Phosphatizer processors must decide whether or not to recycle their water, and whether to treat and send it down the drain or have it hauled away. With stricter regulatory requirements, many choose to pay to have their waste hauled away to avoid the complexities of treating water on site. For those opting to haul their waste, an evaporation system can greatly concentrate the waste and reduce the overall volume that needs to be hauled away. In such cases, a Water Maze evaporator can cut hauling expenses by approximately 95% once the pH is adjusted back to neutral.

## SYSTEM LAYOUT

PHOSPHORIC TREATMENT RECYCLE LOOP AND EVAPORATION SETUP



## COMPLETE WASH WATER SOLUTIONS.

Since the late 1980s, Water Maze has been perfecting the art and science of wash water treatment. We have incorporated various technologies that are capable of: settling heavy solids, removing suspended solids; skimming free-floating oils; removing emulsified oils; bio-remediating organic matter; and reducing (evaporating) water. We provide systems for discharge, as well as for recycling water.

Contact us for more information:

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