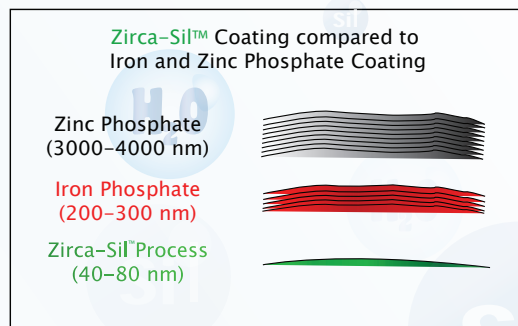


# Bulk Zirca-Sil™

## About Zirca-Sil™:

Bulk Chemicals' Zirca-Sil™ technology is a unique metal pretreatment replacement for some very old and traditional chemistries such as iron phosphates and, more significantly, zinc phosphates. It is a homogeneous inorganic coating based on the formation of a thin layer of a nano/metallic matrix on metal surfaces. This very uniform and protective film is much thinner than iron phosphates and significantly thinner than zinc phosphates. The coating produced is about 40 to 80 nanometers thick.



Zirca-Sil™ is applied by spray or immersion process and can be used for all metals.

In order to fully appreciate the significance and the impact of this technology, a paradigm shift has to be made in the way we think of typical iron and zinc phosphate processes. The following page includes a diagram of the typical zinc phosphate production process and the new Zirca-Sil™ process.

# Bulk Zirca-Sil™

## Advantages of Using the Zirca-Sil Process

- Lower or no energy costs! Zirca-Sil™ operates at 70°F and usually not higher than about 110°F that can occur from carry-over heat from previous stages.
- Zirca-Sil™ is Phosphate Free! With this process there is no concern of phosphates contaminating your effluent.
- The Zirca-Sil™ Process does not produce sludge! Unlike typical iron and zinc phosphate systems, Zirca-Sil™ will not generate the heavy sludge that clogs nozzles, adheres to heating tubes and exchangers, and must be cleaned every few months from tanks.
- Lower Water Usage! Because of the fewer stages used in the process, the amount of overflow water will be less and overall usage of water will be significantly less as well.
- Fewer chemicals! With the Zirca-Sil™ process the typical number of chemicals used is 2: a cleaner and the Zirca-Sil.
- Faster Process Time! By using the Zirca-Sil™ process you can significantly reduce the process time because of the reduction in stages.
- Easy to control! Unlike zinc phosphate, the Zirca-Sil™ process requires fewer and much simpler controls.
- Zirca-Sil™ is compatible with all paints and metals!

## Zirca-Sil™ Process vs. Zinc and Iron Phosphate Processes

	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10
Typical Zinc Phosphate Process	Clean	Clean	Rinse	Rinse	Activate	Zn-Phos	Rinse	Rinse	Seal	DI Rinse
Typical Iron Phosphate Process	Clean	Clean	Rinse	Rinse	Iron-Phos	Rinse	Seal			
Bulk Zirca-Sil™ Process*	Clean	Clean	Rinse	Rinse	Zirca-Sil™	Rinse	DI Rinse			

NOTE: The Zirca-Sil™ process can also operate as either a three or four stage process depending on the product chosen.

## Quick Comparison Chart

	Maintenance	Water	Phosphates	Heat	Zinc	Nickel	Sludge	No. of Chemicals	Cost
Typical Zinc Phosphate Process									
Typical Iron Phosphate Process									
Bulk Zirca-Sil™ Process									

## Bulk Zirca-Sil™

The Bulk Zirca-Sil™ process is the right choice if you are looking for a greener process that will also provide you with significant savings and exceptional quality.

For more information on the Zirca-Sil™ Process please contact your local representative or call us at 800-338-2855.