

# ZACLON LLC

## PRODUCT APPLICATION GUIDE

### **ZACLON PRODUCT APPLICATION AREA INDEX:**

#### **Agricultural and Animal Feed Industries:**

Zinc Chloride, Ammonium Chloride, Zinc Ammonium Chloride, Potassium Silicate

#### **Coatings Raw Materials:**

Potassium Silicate solutions, Zinc Chloride

#### **Electronic Applications:**

Zacsil E200 Potassium Silicate solution

#### **Industrial and Institutional Cleaner Formulators, Chemical Blenders:**

Potassium Silicate solutions, Ammonium Chloride, Zinc Chloride.

#### **Metal Finishing, Galvanizing, and Plating:**

Zinc Chloride, Ammonium Chloride, Zinc Ammonium Chloride, Zaclon WRP, Zacleam Concentrate, Soprin chemicals, Alloy Repair Rods, Wetting Agent A.

#### **Personal Care, Pharmaceutical:**

Zinc Chloride, Ammonium Chloride, Potassium Silicate.

#### **Textile Industry:**

Zinc Chloride, Ammonium Chloride

*See specific product information for additional details.*

# Zaclon<sup>®</sup> Galvanizing Products

**General Application:** Metal Finishing Shops involved with Hot Dip Galvanizing (Zinc Coating) of Steel, or Terne (lead-tin) coating of Steel.

**Galvanizing Process and Chemicals:** Hot Dip Galvanizing is a highly cost-effective, long-term corrosion protection of steel. To enable the coating, however, the steel must be metallurgically clean. The cleaning processes are similar to those in other metal finishing operations.

Most operations use a caustic cleaning/degreasing as the first cleaning step, using 10% or more *sodium hydroxide* solution, then a rinse tank. Increasingly, acid-type degreasing is being used with products like Soprin Hydronet which reduce environmental and energy costs.

Second step is an acid "pickle" to remove rust and scale, using either *hydrochloric* or *sulfuric acid*, and sometimes an acid inhibitor such as Ironsave from Soprin, and sometimes Antivapor product (also a Soprin material). The acids are usually 10% or thereabouts in concentration, from technical grade acids. Normally concentrations for acids are tracked as Baume. There is then another rinse tank.

The final step before actual coating application is the *galvanizing flux*, such as Zaclon brand fluxes. It is used in solution up to about 25% by weight, again often measured in degrees Baume. Solution flux is also available, premade at 50% by weight in drums or tote tanks. The dry flux may also be floated as a molten salt on top of the molten zinc in a few operations. Note that galvanizing operations may also consume ammonium chloride and ammonium hydroxide for maintaining the flux solution. Wetting Agent A is a surfactant for use in the flux, to put a little foam on a solution tank (less moisture and heat loss) AND to improve wetting of the flux.

The steel is then immersed in molten zinc or zinc alloy.

Post treatments may involve *sodium or potassium dichromate*, or other proprietary passivation treatments such as Zaclon WRP.

Other metals, particularly lead/tin alloys, can also be applied in similar processes.

Alloy Repair Rods are lead-free alloy sticks for repair of small damaged galvanized areas using propane or acetylene torches.

ZACLON Standard Galvanizing Fluxes are packaged in 50 lb plastic bags, 42 bags per pallet. They are all available in solution form as well, up to 50% by weight.

Product	Primary Application
Zaclon K Galvanizing Flux	Galvanizing using preflux solution (non-foaming)
Zaclon F Galvanizing Flux	Galvanizing using molten top flux techniques
Zaclon Sulfate Control Flux (solution only)	Galvanizing operations with sulfuric acid
Zaclon C Galvanizing Flux	Blending into paste fluxes
Zaclon CS Granular Galvanizing Flux	Galvanizing with pre-zinc preheat ovens

Solution Galvanizing Fluxes are high purity, high concentration solutions for tank fill up and for specialized metal coating applications. They are available in tank trucks, 30 or 55-gallon PE drums and 275 or 330 gallon bulk drums.

<b>Product</b>	<b>Specific Application</b>
Zaclon W	Continuous Sheet Galvanizing
High Speed 50 Degree Special	Terne, Tin, and Zinc coating operations,
High Speed 50 Degree Regular	Terne, Tin coating operations
Zaclon ZR	Patented for use with Galfan® alloy

**Specialty Galvanizing Fluxes** are in form of a powder, and are packaged in steel drums with PE liners.

<b>Product</b>	<b>Applications</b>
Zaclon AB Galvanizing Flux	For working skims and ash; non-fuming
Zaclon A Galvanizing Flux	Blend for low fume operations
Zaclon Start Up Flux	Blend for top flux galvanizing start-up

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### **Other Zaclon Products for Galvanizing Operations**

<b>Product</b>	<b>Specific Application</b>
Zaclean Concentrate	Caustic additive to increase cleaning; in 55 gal. Drums or 5 gal. Pails
Zaclon Wetting Agent A	Preflux additive to improve drainage, spatter; in 5 gal. Pails or 55 gal. Drums
Zaclon WRP	Patented non-chromate post treatment passivation; in 55 gal. Drums
Zinc Chloride Granular	Additive for adjusting flux balance
Soprin products	Acid inhibitors, fume suppressants, acid degreasing, and other chemical pretreatment additives
Ammonium Chloride Granular	Additive for adjusting flux balance
Zaclon Repair Alloy Rods	Metal rods for repair of galvanized coating; in 50 lb. Boxes

## **AMMONIUM CHLORIDE and ZINC CHLORIDE**

***Zaclon Ammonium Chloride*** is a high purity product which is naturally non-caking because of its unique particle size. These particles are 0.25 inch irregular nuggets, similar in size to rock salt. Because of the natural anti-caking properties of this size of granules, the product is chemically pure and is not treated with any anti-caking agent. Fine white ammonium chloride, with a particle size similar to table salt, normally requires treatment with anti-cakes to prevent rapid formation of hard-to-process chunks of caked material. A larger rod form is available for galvanizing operations. THIS PRODUCT IS ESPECIALLY USEFUL IN APPLICATIONS CALLING FOR UNTREATED AMMONIUM CHLORIDE; it is non-caking without additives, as anti-caking agents introduce unnecessary contaminants to galvanizing, plating, and other applications sensitive to impurities.

Applications include fertilizers and animal feed additives, plating applications, cleaning products, personal care products such as shampoos, galvanizing operations, pharmaceuticals, and many others.

<b>Product</b>	<b>Packaging</b>
Ammonium Chloride Granular C	Available in 50 lb. Bags, 49 bags per Pallet
Ammonium Chloride Technical Rod	Available in 2400 lb supersacks.

***Zaclon Zinc Chloride*** is a high purity, multi application chemical available in a variety of solution strengths, as well as granular solid. Applications include agricultural feed, fertilizer; pharmaceuticals; batteries; acid zinc plating; fireproofing; household products; hard fiber vulcanization, and many others.

<b>Product</b>	<b>Packaging</b>
<u>Zinc Chloride Granular</u>	Available in 55-lb. poly bags, 40 per pallet.
<u>Zinc Chloride Solutions</u>	All solutions are available in bulk, and larger bulk drums (totes) up to 275 gallons
50% Zinc Chloride	395 lb. or 725 lb. PE Drums
62.5% Zinc Chloride (a.k.a. 65 Degree)	450 lb. or 825 lb. PE Drums
68.5% Zinc Chloride (a.k.a. 70 Degree)	475 lb. or 825 lb. PE Drums
70.5% Zinc Chloride (a.k.a. 72 Degree)	485 lb. or 825 lb. PE Drums

# **ZACSIL® POTASSIUM SILICATES**

Zacsil® Potassium Silicate is a high purity raw material for the manufacture of masonry, roofing and metal coatings, pharmaceuticals, cleaners, sealers, refractories, and welding rods, as well as special grade solutions for electronic, catalyst, and agricultural applications. Normally sold as solutions, in bulk, bulk drums or 55-gallon drums. Flake Zacsil® glass is available as a special order item, packaged in “supersacks”.

<b>ZACSIL® Grade</b>	<b>Weight Ratio SiO<sub>2</sub>:K<sub>2</sub>O</b>	<b>Mole Ratio SiO<sub>2</sub>:K<sub>2</sub>O</b>	<b>Applications</b>
ZACSIL® 865 Soln.	2.07	3.25	Cleaners, weld rods Coatings
ZACSIL® 30 Soln.	2.5	3.92	Cleaners, coatings, flame retardants
ZACSIL® 18 Soln.	1.8	2.95	Special Cements
ZACSIL® E200 Soln.	2.10	3.33	Electronics, high purity applications
ZACSIL® AG Soln.	2.07	3.25	Agriculture (for pH control, silica source)

## **POTASSIUM SILICATE EQUIVALENCY GUIDE**

The other Potassium Silicate manufacturer in North America is PQ Corporation. They use the trade name KSil® for their products. Below is a chart showing the Zacsil product to the KSil grades.

<b>ZACSIL PRODUCT</b>	<b>KSil PRODUCT</b>
865	#6
865 D	#33
30	#1
E200 Electronics Grade	2130

## **SHIPPING AND HANDLING NOTES**

Zaclon normally requires a 2 pallet minimum order. A 20% surcharge is added for smaller amounts of Zacsil or Zaclon flux, ammonium chloride, and zinc products. The 2 pallet does not all have to be the same product, and this minimum does not apply to Halogen Tin, Quilon, Volan, Wetting Agent A, and similar resale products.

For orders under \$1000 total order cost there is a \$150 processing fee.

Drums are palletized for a charge of \$20.00 per pallet. Pallets are included in pricing for bag products. Break-pallet of bagged material results in a flat \$250 additional charge.

One-way bulk drums can be ordered, as well as 2000 to 2400 lb. supersacks for many dry products. Semi-bulk, returnable (two-way) are available for most solution products; there is a \$1500 refundable deposit added to the price of each two way bulk drum, credited on return of the bulk drum in good condition of a returnable. .

## **ZACLON CONTACTS:**

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