



## DATA SHEET

# Zaclon WRP<sup>®</sup>

## White Rust Preventative

Zaclon WRP<sup>®</sup> is a non-chromate white rust preventative for hot dip galvanized steel, and is an environmentally acceptable alternative to chromate treatment. It can be used with most of the commercially available hot dip galvanizing alloys, except for alloys with over 5% aluminum.

When Zaclon WRP is applied under controlled conditions, it forms a clear reaction coating with the zinc coated substrate which prevents white rust formation on galvanized steel. *Zaclon Inc. guarantees that the Zaclon WRP will passivate the galvanized steel to prevent white rust formation, when used as prescribed.*

Under the Zaclon WRP guarantee, Zaclon will refund the purchase price of our product should any properly treated galvanized steel exhibit white rust.

Zaclon WRP must be applied to the newly hot dip galvanized steel while the steel is at high temperature to obtain a conversion coating between the zinc surface and the Zaclon WRP. After the galvanized steel is removed from the zinc kettle, it must be quenched in a Zaclon WRP bath while the galvanized steel is still hot. The optimum temperature range of the galvanized steel going into the Zaclon WRP quench tank is 325 °F to 450 °F. The conversion coating of the Zaclon WRP to the zinc surface is complete within one minute. Applying Zaclon WRP to zinc coated steel above the 450 °F degree temperature will give white rust protection but can yield a streaky and opaque appearance on the galvanized steel. The higher temperatures will also precipitate some of the Zaclon WRP in the bath, thus the consumption rate will increase. Application at steel temperatures below 300 °F will give insufficient protection of the galvanized steel and is not recommended. Please note that the use of a surface-probe type thermocouple with a hand-held thermometer is more accurate than a "heat gun" IR thermometer when working with galvanized articles.

Zaclon recommends maintaining the quench bath temperature. Bath temperatures from 120 °F to 180 °F offer the most consistent appearance and performance; exceeding 180 °F may degrade performance of the product and increase possible spattering of hot solution.

The recommended Zaclon WRP concentration range is between 2% and 4% by weight in water. (Please note that calculations on a volume basis are well within acceptable tolerance.) As an example for a 4000 gallon tank, you would add 1000 pounds of Zaclon WRP to obtain a 3% by weight. (8.34 lbs./gallon water times 4000 gallons times .03 equals 1000 pounds of Zaclon WRP). In those instances where it is difficult to control the temperature below 450 °F., we recommend the lower range of concentration and more frequent analysis of the bath to ensure that the concentration does not get

below the 1.5% level. The ideal concentration would have to be developed for that particular temperature and operating condition.

As with all controlled conditions and ranges, working in the middle of the ranges presented above will give the best results.

A colorimetric test kit and instructions are available that will analyze the % Zaclon WRP in the bath. Approximately 20 minutes are needed to do the analysis including the sample preparation time. The frequency of analysis will be determined by the tonnage and use rate of the Zaclon WRP.

We strongly recommend a filtration system with a 30 micron or less filter to maintain a clean application of the Zaclon WRP on the galvanized steel. Experience from the field has shown that it is best to keep the filter system recirculating or wet even when Zaclon WRP is not being applied. Although the precipitate will be minimal, Zaclon WRP can plug the pores of the filter if allowed to dry on the filter.

We also recommend keeping product treated with WRP under cover for at least a few hours where practical.

- Acid rain can be detrimental to a fresh WRP-treated surface, leaving black streaks. These streaks do not appear if the work is indoors for several hours before exposing it to rain; the WRP surface is more resistant to acid rain than chromated surface.
- WRP conversion coating is tightly adherent, and should be paintable by the common metal paints. The surface is a slightly alkaline silicate, similar in many ways to a cement or concrete surface. It is unlikely to need a phosphate primer, and in fact will likely resist priming using acid prepaint treatments.

Zaclon WRP® is covered by one or more patents, including a process use patent. The purchase of the product from Zaclon authorizes the consumer to its use under such patents.

## **PERSONAL SAFETY AND FIRST AID**

**HEALTH HAZARDS:** Zaclon WRP is an alkaline material that may irritate the skin and cause eye injury.

**SAFETY PRECAUTIONS** Avoid contact of aqueous solutions of Zaclon WRP® with eyes, skin and clothing. Wear chemical goggles and rubber gloves when handling undiluted Zaclon WRP®.

**FIRST AID** In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes, and call a physician. In case of skin contact, flush skin with water. Remove contaminated clothing and wash before reuse.

## **STORAGE AND HANDLING**

The freezing point of Zaclon WRP is very close to that of water. If the solution is exposed to temperatures below 32 °F ( 0 °C), move the container to warm storage until

thawed and mixed thoroughly before using. If it is exposed to several cycles of freeze/thaw, the material is compromised and should not be used.

All spills of Zaclon WRP solutions should be washed away immediately to a chemical sewer with large volumes of water to avoid slippery footing.

## **DISPOSAL**

After neutralization with acid, the Zaclon WRP® solution can often be disposed of as you would any non-RCRA plant waste. Meeting Federal, State and local compliance regulations and approval, solutions may be flushed to sewer to waste treatment area. Only concern with this would be levels of zinc in this material.\*\*

\*\*Due to changing governmental regulations, such as those of the Department of Transportation, Department of Labor, U.S. Environmental Protection Agency and the Food and Drug Administration, references herein to governmental regulations may be superseded. You should consult and follow the current governmental regulations, such as Hazardous Classification, Labeling, Food Use Clearances, Worker Exposure Limitations and Waste Disposal Procedures for the up-to-date requirements for the products described in this literature.

## **SHIPPING CONTAINERS**

Zaclon WRP® is shipped in 55 gallon non-returnable plastic drums containing a net weight of 550 pounds (249 kg).

Zaclon WRP® is not regulated as a hazardous material by the Department of Transportation.\*\*

The information set forth herein is furnished free of charge and is based on technical data that Zaclon, Inc. believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

## **CONTACTING ZACLON INC.**

**For placing orders or requesting additional product information, please contact us as shown below.**

**ON THE INTERNET: [www.zaclon.com](http://www.zaclon.com)**

**Email** Customer Service: [krosati@zaclon.com](mailto:krosati@zaclon.com)

### **BY PHONE:**

Toll Free In Continental U.S.: (800) 356-7327

From outside United States: (216) 271-1715

### **BY MAIL:**

Zaclon, Inc.  
Customer Service  
2981 Independence Road  
Cleveland, Ohio 44115