



Better Chemistry. **Better Business.**

**Enerox® Anti Pit EM-1**

**Product Code: 2850002**  
**Revised Date: 02.26.2018**

**Enerox® Anti Pit EM-1**  
**Additive for Hydrochloric Acid Baths**  
**Additive for Nickel Plating Baths**

**Enerox® Anti Pit EM-1** is a unique, concentrated blend of wetting agents, recommended to minimize corrosive acid fume and spray in working Hydrochloric Acid pickling solutions. **Enerox® Anti Pit EM-1** will also enhance activity of the acid solution.

**Enerox® Anti Pit EM-1** can also be used in Nickel Plating Baths as an Anti-Pit agent, preventing gas pitting, and assisting in the control of grease pitting. **Enerox® Anti Pit EM-1** is intended for **mechanically** agitated systems. The recommended range for this application is 0.20-0.50 %/vol, with 0.25 %/vol the target concentration.

**SPECIAL FEATURES FOR USE IN HYDROCHLORIC ACID BATHS**

- Stable Foam Blanket Minimizes Corrosive Mist & Spray
- Provides Detergency to Emulsify Residual Oils & Grease
- Improves Surface Wetting by Reducing Surface Tension
- Convenient, Easy to Add Liquid Concentrate
- Application in Barrel, Rack, Basket & Continuous Strip Process Lines

**RECOMMENDED APPLICATION SOAK CLEANER**

	<b>Range</b>	<b>Optimum</b>
Concentration	0.10 – 1.00% v/v	0.50% v/v
Temperature	75 – 140 deg F (21-60 deg C)	As required
Time	Based on desired pickling	As required
Agitation	Solution movement or mild air	As required



## Product Bulletin

Better Chemistry. **Better Business.**

**Enerox® Anti Pit EM-1**

**Product Code: 2850002**  
**Revised Date: 02.26.2018**

### EQUIPMENT

Tank	As required for Hydrochloric Acid
Heater	As required for Hydrochloric Acid
Ventilation	Mechanical to maintain levels below permissible exposure limits
Agitation	Stirrer, pump, work movement, or mild air

### SOLUTION MAKE UP

**DANGER!! Hydrochloric Acid is a corrosive !! Consult Hydrochloric Acid MSDS sheet before handling this product. It should be handled with all the safety precautions as described in the MSDS.**

Commercial grade, 32-degree Baume Hydrochloric Acid is typically used.

Be sure the process tank has been drained and cleaned. Determine the volume of Hydrochloric Acid required for processing needs. First, add the required volume of clean, cold water. Second, gradually add the predetermined volume of Hydrochloric Acid, while mixing. Third, add the required volume of Enerox® Anti Pit EM-1. Adjust solution operating temperature.

### ANALYSIS PROCEDURE

The active components in Enerox® Anti Pit EM-1 consumed in the cleaning process by emulsifying oils and grease. Drag out of the pickling bath and replenishment of the bath with water also dilutes the working solution. In double cleaning Enerox® Anti-Pit EM-1 cycles, drag in of alkaline solution from the second electro cleaner Will neutralize some of the acid bath's acidity. Regular maintenance additions of Enerox® Anti-Pit EM-1 in ratio with Hydrochloric Acid, are recommended to replenish the bath. This can be accomplished by observing quality of cleaning (pickling, descaling, rust removal, etc.), conditioning and making appropriate additions per requirements of the particular process. Alternatively, the acid bath can be analyzed to determine actual concentration of acid, and the required addition of Enerox® Wetting Agent EM-1 & Hydrochloric Acid, to restore the balanced ratio of the working solution.



## Product Bulletin

Better Chemistry. **Better Business.**

**Enerox® Anti Pit EM-1**

**Product Code: 2850002**  
**Revised Date: 02.26.2018**

### Hydrochloric Acid Analysis Procedure

1. Pipette a 10-milliliter sample of the acid bath into a 250-milliliter Erlenmeyer flask.
2. Add 50 milliliters of clean water.
3. Add a few drops of Methyl Orange Indicator, developing a red/ yellow solution color.
4. Titrate with 1.0 Normal Sodium Hydroxide, until the solution color has just changed to green.

Calculation (milliliters of titrant) x (Normality) x (1.115) = Hydrochloric Acid (36%, as fl oz/gal)

### PHYSICAL CHARACTERISTICS

Appearance	Clear. Light yellow liquid
Odor	Mild
Foaming Tendency	Moderate
Maximum Solubility	Complete

### HAZARD CLASSIFICATION

DOT Hazard Class	None assigned
DOT Shipping Name	None assigned
UN Number	None assigned
Packing Group	None assigned
Guide Number	None assigned

### WASTE TREATMENT & DISPOSAL

Hydrochloric Acid and it's working solutions are acid and corrosive They may be neutralized with dilute caustic, soda ash, or lime, to meet local POTW or municipal effluent discharge requirements. Sludges and oils should be separated out before discharge. Spent acid solutions may contain dissolved metals from the cleaning and pickling process. Therefore, additional treatment of the solution may' be required to meet discharge requirements.



## Product Bulletin

Better Chemistry. **Better Business.**

**Enerox® Anti Pit EM-1**

**Product Code: 2850002**  
**Revised Date: 02.26.2018**

### **SAFETY INFORMATION**

Please read and understand the Enerox® Anti-Pit EM-1 Material Safety Data Sheet before handling and using this product.

Recommended safety procedures for Hydrochloric Acid tank make up are described in the appropriate MSDS.

### **WARRANTY**

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.