

# Chemical Methods, Inc.

20338 Progress Drive  
Cleveland, Ohio 44111  
Phone: 216-476-8400  
FAX: 216-476-1231  
www.chemicalmethods.com

## TECHNICAL DATA SHEET

### **CM-957** **IMMERSION ZINC PHOSPHATE SOLUTION**

#### **PRODUCT DESCRIPTION**

**CM-957** is an immersion zinc phosphating solution for use on steel substrates. **CM-957** can be used to impart zinc phosphate coatings as pre-paint treatments or to generate heavy zinc phosphate coatings prior to oil treatment. It is suitable for use in immersion processes. Pre-paint coating weights on the order of 300 to 600 mg/sq.ft. are typical. **CM-957** meets the following federal and military specifications: Mil-P-16232-D (Type Z), QQ-Z-325-A (Type III) and TT-C-490 (Type I).

#### **BENEFITS**

- Easy to Maintain and Control
- Ultra Concentrated
- Provides superior paint adhesion and corrosion resistance
- Low sludge formation
- Long tank life
- Meets military specifications

#### **PHYSICAL AND CHEMICAL PROPERTIES**

Appearance, Concentrate	Clear Green Liquid
Appearance, 4% Dilution	Pale Green Liquid
Specific Gravity	1.660
Pounds per Gallon	13.90
pH, neat	< 1.0
pH, As Used	2.2

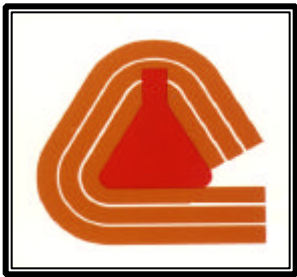
#### **USE DIRECTIONS – Please refer to CM-957 Operating Guidelines for more specific information.**

*Pre-paint Immersion Application* – Operate tank at a concentration level of 2% by volume of CM-957 maintaining an operating temperature of 140°F to 160°F. An initial addition of CM-953 at a rate of 20 ounces per 100 gallons is required prior to operating. Bath can be maintained using total acid and CM-953 titration control procedures.

*Heavyweight Immersion Application* – Operate tank at a concentration level of 4% by volume of CM-957 maintaining an operating temperature of 170°F to 200°F. Bath can be maintained using total acid and iron content titrations.

#### **SAFETY AND HANDLING**

Refer to material safety data sheet for additional information about this product.



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### CM-957 Operating Guidelines

**Process Tank Control-** Under normal pre-paint operating conditions, only total acid and CM-953 levels require consistent monitoring. Heavyweight application requires total acid and iron content titrations. Occasionally, additional measurements may be taken for process review or other documentation purposes. These measurements are typically run in the CMI laboratory. The following chart outlines typical operating parameters for **CM-957**.

Method	% by Volume	Total Acid (ml)	Free Acid (ml)	FA/TA Ratio $\pm 0.034$	CM-953 Level (ml)	Zn Content (ml)	Temperature (°F)	Time (min)
Immersion	2%	8.5	1.3	0.153	1.75	3.5	140-160°	3-5
Heavyweight	4%	19.0	3.0	0.158	-	7.0	170-200°	5-15

### Tank Adjustments – Pre-Paint Application

*Bath Preparation for Pre-Paint Immersion Operation:* Clean and descale equipment if previously used. Fill tank  $\frac{3}{4}$  full with water. Circulate the tank and add required amount of CM-957. Add water to reach operating level, bring temperature into range, then add dosage of CM-953 just prior to initiating operation.

*To Raise Total Acid:* An addition of 32 fluid ounces of CM-957 per 100 gallons of tank volume will increase total acid value by 1.0 ml.

*To Lower Free Acid:* An addition of 40 ml of CM-15 per 100 gallons of tank volume will decrease free acid value by 0.2 ml.

### Tank Adjustments – Heavyweight Application

*Bath Preparation for Heavy Immersion Operation:* Clean and descale equipment if previously used. Fill tank  $\frac{3}{4}$  full with water. Circulate the tank and add required amount of CM-957. Add water to reach operating level, bring temperature into range, then check total acid level. Add dosage of CM-957 to adjust total acid, if necessary. In addition to total acid monitoring, the iron content of the tank should be checked daily.

*To Raise Total Acid:* An addition of 32 fluid ounces of CM-957 per 100 gallons of tank volume will increase total acid value by 1.0 ml.

*To Lower Free Acid:* An addition of 40 ml of CM-15 per 100 gallons of tank volume will decrease free acid value by 0.2 ml.