

# NCS # Z-3, Final Rinse

RINSE PASSIVATOR SEALER. Z-3 is a non-chrome final rinse passivation treatment for aluminum passivation, Iron and Zinc phosphate treatment processes. Provides a material with ready to use ph minimizing ph shift due to overuse or less need for low ph material.

Z-3 provides a superior surface which is highly receptive to painting and coatings providing salt spray results equivalent to chrome. Provides enhanced bonding of all types of coatings.

Z-3 will provide improved bonding and corrosion resistance of applied coatings. Z-3 does not contain chrome or other heavy metals.

**Meets the MIL Spec 16232 Class 4 (24 hours Salt Spray) over zinc and manganese phosphate.**

## Features & Benefits

Easy to control. Simple PH 7.8 -11.8 Non-Chromated.

CAN BE CONSIDERED FOR USE IN MILITARY ALUMINUM PROCESS SPEC (MIL C 5541 E) WITH MIL C 81706 CONVERSION COATING NON-CHROME

Mil Spec:

16232 Class 4 (24 hour Salt Spray, zinc or manganese Phosphate)

C-5541E Type 2 (aluminum)

Passivates zinc, aluminum and iron coatings.

Can be used in spray and immersion applications.

## Physical Data

|                    |                         |
|--------------------|-------------------------|
| Specific gravity   | 1.018                   |
| Product Type       | Liquid                  |
| PH                 | 2                       |
| LBs/Gal            | 8.49                    |
| Foam, 0=Low 9=High | 0                       |
| Shelf-Life Years   | 10 Years                |
| Freeze Information | Not Damaged by Freezing |

## Operating Conditions/Typical Processing

### 3 STAGE CLEAN & COAT PROCESS:

- 1) Clean and Phosphate in Zinc, Manganese or Iron Phosphate
- 2) Rinse
- 3) Z-3 treated rinse, .25-1% by volume, 120 deg. F., 25 seconds., PH 4.5 -5.6
- 4)
- 5) Dry & To paint.

FOR 5 STAGE PROCESS ADD ALKALINE CLEANER 1022, 1033

Can Also be used in Zinc Phosphate Processes

**PH CONTROL: FOR STEEL TARGET PH RANGE OF 5.2-6.0, NON-FERROUS 4.5-6.0**

## Packaging

|                |                                                                                      |
|----------------|--------------------------------------------------------------------------------------|
| Container Type | POLY                                                                                 |
| Net Units      | 467                                                                                  |
| Tare Wt.       | 25                                                                                   |
| Gross Wt.      | 492                                                                                  |
| DOT_NAME       | UN 3264, Corrosive Liquid, Acidic, inorganic, N.O.S., (Fluorozirconic Acid),8, PG II |
| DOT Hazard     | Corrosive                                                                            |

## Use Parameters

|                     |                  |
|---------------------|------------------|
| Concentration Range | .25-1% by volume |
| Temperature Range   | 75-150 F.        |
| Time Range          | 20 sec. min.     |
| Agitation           | Spray or dip     |

## Waste Disposal

NEUTRALIZE

## Holding Tank Materials of Construction:

ACID RESISTANT, STAINLESS OR POLY

## Testing, Operating, & Trouble Shooting Data

### Maintain Ph Of 4.5 - 5.6 As Final Seal (2-8-2017 / Ros)

To Lower The Ph: Use Ncs Z-3

To Raise The Ph: Use : Ph Conditioner 4 , Or Ammonium Hydroxide,  
Or Surfcon H-430 ( Liquid Ammonium Bicarbonate) , Or Ammonium Bicarbonate.

### **Prior To Testing, Sample Must Have A Ph 4.5 - 5.6**

### Dropper Procedure: 1/17 (target 1/4 - 1/2 %)

- 1) Take A 20ml Sample (must Be Within Ph Range)
- 2) Add 3-5 Drops Of Phenol Indicator
- 3) Add Drop By Drop Of 0.1n Naoh Until A Permanent Pink Appears. (count The Drops)
- 4) The Number Of Drops Required Multiplied By A Factor Of .05 = % By Volume
  - 5 To 6 Drops ~1/4% By Volume
  - 10 To 11 Drops ~ 1/2% By Volume
  - 21 To 22 Drops ~ 1.0% By Volume

### Titration Procedure: 1/17 (target 1/4 - 1/2 %)

- 1) Take A 50ml Sample (must Be Within Ph Range)
- 2) Add 3-5 Drops Of Phenol Indicator
- 3) Add 0.1n Naoh Until A Permanent Pink Appears. (record # Of Mls)
- 4) The Number Of Mls Required Multiplied By A Factor Of .5 = % By Volume
  - 2.0 To 2.1 Mls ~1% By Volume
  - 0.9 To 1.1 Mls ~ 1/2% By Volume
  - 0.4 To 0.5 Mls ~ 1/4% By Volume

### Coating Weight And Crystal Formation Procedures: ( 1-2018 / R O S )

Our Technical Service Lab Provides 500x Digital Photo Prints Of The Conversion Coating. Microscopes At 500x Show Complex Mixed Crystal Of Zirconium At Typically Less Than < 1-Micron In Size. It Is Known The Crystals Less Than < 1.0 Micron Are Providing The Active Sites For The Performance Of Corrosion Protection And Coating Adherence Of Paints And Other Top Coats. ***It Is Recognized That The Performance Of Zirconium Coatings On Metals Are Of Superior Performance.***

1) Technical Service Lab On Site Provides Digital Microscopic ( 500x ) Evaluation Of The Coatings Is Typical And Provides Significant Quality Information To Confirm The Surface Conversion.



## Product Bulletin

Product Name: NCS # Z-3, Final Rinse

Product Code: 2204910

Revision Date: October 24, 2025

### Alternate Methods Are:

S P M ( Scanning Probe Microscopy )

## Other Information

It is important that the OSHA DATA, "Material Safety Data Sheet" be carefully read and reviewed with the users of this product. OSHA data is required to be posted in the work area by law.

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## Our People. Your Problem Solvers.

For more information on this process,  
please call us at 203.756.5521 or email: [techservice@hubbardhall.com](mailto:techservice@hubbardhall.com)

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