Product Bulletin

Product Name: NCS # Z-3, Final Rinse
Product Code: 2204910
Revision Date: February 12, 2024

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

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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

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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 Then < 1-Micron In Size. It Is Known The Crystals Less Then < 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 Microscpic (500x) Evaluation Of The Coatings Is Typical And Provides Significant Quality Information To Confirm The Surface Conversion.

Important To Note:
1 Nanometer Is The Length Of 10 Carbon Atoms. That Is Tiny !!!!!

*It Has Been Indicated: " The Length Your Thumb Nail Grows In 1 Sceond Is A Nanometer.

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,
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