Product Bulletin
Product Name: TCJ-100 (M2)
Product Code: 2202918
Revision Date: February 12, 2024

TCJ-100 (M2)

HEAVY ZINC PHOSPHATE "Non Nickel". TCJ-100 M2 is a "LO-TEMP" heavy coating zinc phosphate compound used for applying corrosion inhibiting and lube coatings to steel in immersion tanks. Operates as low as 140 deg.F. ULTRA LOW SLUDGING, UP TO 75% LESS !!! EXCLUSIVELY APPROVED AT AUTOMOTIVE (FIAT, GM, FMC ETC) FOR HEAVY COATING ZINC.

MEETING ALL SALT SPRAY, COATING WEIGHTS, CRYSTAL MORPHOLOGY, TORQUE/TENSION SPECS, ETC. TCJ-100 M2 is an immersion type product which provides coatings of 2,000+ mg/ft2. Coatings are applied over steel and subsequently coated with a corrosion inhibiting emulsion type oil, wax or lubricant. Ultra low sludging.

note: By varying % in bath and temperature lower or higher coatings can be obtained per process needs. TCJ-100 M2 provides a dark coating which resists up to 250 hours corrosion resistance in salt spray testing conditions.
Premium quality performance. Does not contain EDTA type products. Meeting various industry specifications. FIAT

Features & Benefits

LOW-TEMPERATURE PROCESSING:
1) PROVIDING SIGNIFICANT ENERGY HEATING COSTS SAVINGS.
2) ULTRA LOW SLUDGING FOR LOWEST COST & DOWNTIME
3) EXTENDED BATH LIFE LOWERING COST.
4) RESISTANCE TO IRON RELATED PROBLEMS. Up to 20 points iron
5) PROVIDES DARK DENSE COATINGS.
6) PROVIDES IMPROVED CORROSION RESISTANCE AND BONDING.
7) MINIMIZES "EXCESS" HEAT RELATED SLUDGE ON COILS.
8) EFFECTIVELY COATS RESISTANT ALLOYS

Physical Data

Specific gravity	1.5
Product Type	Liquid
PH	1
LBs/Gal	12.51
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

1) PRE-CLEAN, Alkaline #LS-150, or V-610, 8% B.V, 8 min., 170 deg. F.
2) Rinse (Or alkaline descaler #375)
3) Acid Pickle, (Hydrochloric or Sulfuric) 8 mi
4) Rinse, 5) Preferred second Rinse
6) T c j -100 M-2 , 140-180 F., 8-30 Min, 32+ points acid (re:5%) Iron to 20.
7) Rinse, 8) Rinse
9) Oil option: 5-20% by volume #168, 125 deg. F, 30-60 Sec
10) Dry to touch “pre-paint option” #2018, 1-2%, 125 deg F. 30-60 sec.
11) other final treat options: Polymer Lube t l 48, soap Loc-Lube #5, Colored paints dye coatings, Wax emulsions, Extrusion or Torque Coatings.

Packaging

Container Type	POLY
Net Units	688
Tare Wt.	25
Gross Wt.	713
DOT_NAME	UN 3264, Corrosive Liquid, Acidic, inorganic,N.O.S., (Phosphoric & Nitric Acids),8, PG II,
DOT Hazard	Corrosive
Tariff ID	2835.29

Use Parameters

Concentration Range	4-6% 35-95 points total acid
Temperature Range	145-185 Deg. F.
Time Range	8-20min
Agitation	n.a.

Waste Disposal

NEUTRALIZE PH, REMOVE FATS, OIL, GREASE AND HEAVE METALS

Holding Tank Materials of Construction:

ACID RESISTANT, STAINLESS OR POLY

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Testing, Operating, & Trouble Shooting Data

New Tank Make-up:
Fill Tank With Water Leaving Enough Room For 5% By Volume Of T C J-100. (5 Gallons Per 100 Gal).
Bath Requires A " S E E D I N G " Or Trace Amount Of Iron In The Bath To Stabilize The Start Up.
1) Place A Barrel Of Scrap Parts In Solution Prior To Heating The Tank, In Order To "seed" Iron Into The Bath.
2) Allow The Parts To Sit In Solution Until The Tank Reaches Operating Temperature And The Solution Tests Positive For Iron. Process May Begin When The Operating Temperature Has Been Reached And Iron Is Positive.

Total Acid:(range 35-95)
1) Take A 10 Ml Sample
2) Add 5-10 Drops Total Acid Indicator (phenol Indicator).
3) Titrate With 0.1 N Naoh (caustic Soda) (Color Will Change From Clear To Pink)
4) Number Of Mls Used = Total Acid
*to Raise Total Acid- 1% Add Of T C J-100 M2 Will Raise The Total Acid Points By 6-7

Special Procedure For Baths With Very High Iron Where It Interfers With The Color Change.
Add 25 Mls Water + 1 Ml Bath Sample + 5-15 Mls White Ti02 Color Transition Reagent. Then Proceed With Above Test.
The Tio2 White Reagent Will Allow You To More Clearly See The Color Change To Endpoint, Multiply The Test Results By 10 To
Obtain Total Acid.

Free Acid: (range Per Ratio)
1) Take A 10 Ml Sample
2) Add 5-10 Drops Of Bromophenol Blue
3) Titrate With 0.1 N Naoh (caustic Soda) (color Will Change From Yellow To Blue)
4) Number Of Mls Used = Free Acid

Acid Ratio:(range 4.5-9)
Ta/fa = 4.5 New Bath – 9 Older Bath With Higher Iron

Iron Test: (range 1- 15)
1) Take A 10 Ml Sample
2) Add 5-10 Mls Of 50% Sulfuric Acid
3) Titrate With 0.2 N (A K A .189 N) Potassium Permanganate (obtain A Permanent Pink Endpoint)
4) Number Of Mls Used = Points Of Iron

Effective Total Acid: Target 35+ Points Of Eta
Eta= Total Acid – (iron X 3.5)
Target = 35-45 Pts Of Effective Total Acid

Iron	Total Acid Target
1.0	35-45
2.0	42-52
3.0	45.5-55.5
4.0	49-59
5.0	52.5-62.5
6.0	56-66
7.0	59.5-69.5

8.0	63-73
9.0	66.5-76.5
10.0	70-80
11	73.5-83.5
12	77-87
13	80.5-90.5

Various Specifications: The Subject Product Meets The Operating Specifications Of Many Of The Processes Listed: Gm6074m,

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

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