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WARNING:

**This chemical is formulated
for industrial use only**

Contact with skin or clothing or other improper handling or use of this product may result in bodily harm or other damage. Before using or mixing the contents with other substances, all labels applied to container, the applicable Technical Data Sheet and Material Safety Data Sheet should be read and specific instructions and precautions followed to assure correct use and personal safety.



Z-PHOS-MM20

INTRODUCTION

Z-PHOS-MM20 is a liquid chemical used to produce a smooth, uniform grained, corrosion resisting, paint bonding zinc phosphate coating on steel, zinc and aluminium surfaces. The Z-PHOS-MM20 bath is well adapted to continuous or intermittent processing of steel surfaces in a multi-stage spray washer or by immersion

The Z-PHOS-MM20 bath, made from the concentrated liquid chemicals is applied in conventional power-spray processing equipment having four or more stages.

Z-PHOS-MM20 is readily adaptable to automatic bath control and auto dosing.

BATH MAKE-UP AND OPERATION

Spray:	50 litres of Z-PHOS-MM20 per 1000 litre bath
Time:	60 seconds
Spray Pressure:	55 - 80 kpa nozzle pressure
Controls:	2 Titrations
Temperature:	38° - 57° Celsius

PROCESS SEQUENCE

- a) Clean with PRELUDE AC100
- b) Rinse
- c) Acid derusting with PRELUDE DR50 (optional)
- d) Rinse
- c) Coat with Z-PHOS-MM20
- d) Rinse
- e) Passivation with PASSIVATOR 20
- f) Drying
- G) Oil with CONDAPROTECT 1271

EQUIPMENT

The work is processed in conventional power spray processing equipment. The equipment for the Z-PHOS-MM20 stage should be constructed of stainless steel (Type 316 preferred), but heavy gauge mild steel will be satisfactory.

All heated tanks should be equipped with steam plate coils and side heating (preferred for a more even temperature distribution) or other heat sources capable of heating the bath to the specified

● *Bringing the Best Products to the Surface* ●

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Mild steel crates, baskets, or conveyors, etc., should be provided to carry the work through the various stages.

TECHNICAL DETAILS

BATH MAKE UP CONTROL

MAKE-UP

For each 1000 litres of bath, add in sequence with stirring:

Water : 900 litres

Z-PHOS-MM20 : 50 litres

Caustic Soda flakes (carefully : ≈ 1 kg
dissolved in cold water)

Mix and make-up to volume (1000 litre) with more water.

Ø See section B Operational Recommendations (I) Add when bath at operating temperature.

CONTROL POINTS (For Normal Operations)

Total Acid Titration : 15 – 20 ml

Free Acid Titration : 0.4 – 0.8 ml

Acid Ratio : 10 - 15

Temperature : 38°C - 57°C

Spray Time : 60 seconds

Nozzle Pressure : 55 - 80 kpa (8 - 123 p.s.i)

(Immersion Time : 2 – 5 minutes)

TESTING & BATH MAINTENANCE

GENERAL

The bath is controlled in the plant by titrations for Free Acid and Total Acid.

TOTAL ACID TITRATION

- i) Pipette to 10 ml sample of Z-PHOS-MM20 bath into a flask.
- ii) Add 6 to 7 drops on Phenolphthalein Indicator solution
- iii) Fill the burette to the zero mark with 0.1N Sodium Hydroxide
- iv) While stirring the sample, slowly run in the sodium hydroxide solution from the burette until a pink colour is obtained.
- v) Record the number of millilitres of sodium hydroxide solution used as the Total Acid titration.
- vi) To replenish, add 1.0 litres of Z-PHOS-MM20 per 1000 litres of bath for each millilitre lacking.

FREE ACID TITRATION

- i) Pipette a 10 ml sample of Z-PHOS-MM20 bath into a flask
- ii) Add 4 to 5 drops of Bromophenol Blue Indicator (Bromocresol Green is also suitable)
- iii) Fill the burette to the zero mark with 0.1N Sodium Hydroxide solution.
- iv) While stirring the sample, slowly titrate with 0.1N Sodium Hydroxide until a blue end point is reached. (With Bromocresol Green the end point is green).
- v) Record the number of millilitres on 0.1N Sodium Hydroxide used as the Free Acid Titration.

ACID RATIO DETERMINATION

- i) Determine the Acid Ratio by dividing the Total Acid by the Free Acid. The normal maximum Acid Ratio is 15. If the ratio exceeds 15, it is advisable to operate the Z-PHOS MM20 bath at a higher Pointage.
- ii) If Acid Ratio is too high, but Pointage is normal and marginal coatings are being produced, dump a portion of the bath and add sufficient water and Z-PHOS-MM20 concentrate to restore to proper Pointage.

OPERATIONAL RECOMMENDATIONS

- i) If "blushing" of steel stock occurs on the line:
Make sure that the work does not dry between stages.

Operate the Z-PHOS-MM20 bath on the low side of the temperature range.

Be sure the work is being dried rapidly. Use supplemental compressed air blow-off if necessary.

Reduce temperature of rinse stage prior to the coating stage and ensure that this rinse is just alkaline to phenolphthalein.
- ii) Thin sparse coatings will result if the bath is operated at a lower temperature than specified or without sufficient Z-PHOS-MM20 replenisher additions.
- iii) High costs will result if the Z-PHOS-MM20 is operated above the specified temperature range.
- iv) It is desirable to clear the line of work prior to shut-down at night, over weekends, or during anticipated prolonged line stoppages.
- v) The initial charge and replenishment data contained herein are normal for most installations: however, you're A.C.C. representative may suggest a deviation from this data if indicated by local conditions.
- vi) The Z-PHOS-MM20 bath may be satisfactorily operated at a Pointage as low as 9 ml, depending upon the production conditions and specifications.

AFTER TREATMENT

After the work is treated, it must be given two rinses - an unheated water rinse, and a final rinse in water acidulated with a Passivator. This final acidulated rinse may be heated to facilitate drying. You're A.C.C. representative will recommend the Passivator best suited to local conditions.

Parts coming from the final acidulated rinse should be dried as soon as possible in an indirectly fired oven or by other means which will not contaminate the coating with fumes, oil, or partially burnt gases. In many cases, heavy gauge metal will retain enough heat to dry completely and rapidly without using an oven.

Products with cavities or pockets which trap moisture should be blown dry with a jet of clean, compressed air. Moisture splatters should be dried with clean cloths.

If handling of dried, unpainted work is necessary, operators should wear clean cotton gloves.

HANDLING PRECAUTIONS

Z-PHOS-MM20 is a concentrated, liquid, acidic chemical.

Protective gloves aprons and goggles should be worn when handling Z-PHOS-MM20 to avoid contact with skin and eyes.

If splashed on skin, wash off immediately with copious amounts of fresh water and seek medical attention.