



Product Bulletin

Better Chemistry. **Better Business.**

Mi-Phos™ M GR

Product Code: 2203001
Revised Date: 04/27/2017

Mi-Phos™ M GR

DESCRIPTION

Grain Refiner for Manganese Phosphate used as a heated Pre-dip for Manganese Phosphate.

FEATURES AND BENEFITS

- Two parts system for better pH control
- Temperature 180 F (82C)
- RoHS and REACH Compliant
- Produces fine, dense, uniform phosphate coatings
- Increases corrosion resistance and blush rust
- Reduces thickness and crystal size preventing fracture phosphate coating.
- Reduces paint consumption

TYPICAL APPLICATIONS

- Pre-Paint and Powder Coat
- Automotive
- Hand Tools
- Military DOD parts

Mi-Phos™ M GR has been specifically developed for use on ferrous metals immediately before processing through the Mi-Phos™ M-5 or similar manganese phosphating solution. The **Mi-Phos™ M GR** is supplied as a two-part mix: Part A and Part B. Their use enables the production of fine, even crystalline phosphate coatings. **Mi-Phos™ M GR** is particularly beneficial on components that have been alkaline cleaned or acid pickled.



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EQUIPMENT

Tanks and all associated equipment can be constructed of mild steel. Ideally, the solution should be air agitated and capable of being heated.

TYPICAL OPERATING CYCLE

1. Alkaline clean
2. Rinse
3. **Mi-Phos™ M GR**, with agitation
4. Mi-Phos M-5 phosphate
5. Rinse
6. Sealing rinse

OPERATING PARAMETERS

1. Dissolve 2 to 3 g/L of **Part A** in water in the tank.
2. When **Part A** has dissolved completely, add by sprinkling over the surface of the tank, 2 to 3 g/L of **Part B**. The solution should be continuously stirred or air agitated while making this addition.
3. Heat to operating temperature. This product may be used from 180 to 190 degrees F. Higher temperatures tend to produce more grain refinement at the expense of shorter solution life.

pH	8.5 - 10
Temperature.....	180 - 190°F
Contact time.....	5 - 10 minutes minimum

CONTROL

Straightforward analytical control of Mi-Phos™ M GR is not possible. Solutions are generally discarded on a weekly basis. However, the life of the solution is greatly affected by drag-over contamination, which should be kept to a minimum. Mi-Phos™ M GR operates at a pH of 9.5. If acid drag-in occurs, the pH should be maintained by adding Part A. Should alkaline drag-in occur, phosphoric acid should be added to restore the correct operating pH. Drag-out loses should be replaced by adding 1 g/L of both Part A and Part B in the same order and manner as described under OPERATING PARAMETERS.



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CAUTION: Avoid contact with eyes or skin. Do not swallow. Avoid breathing dust or mist. Use with adequate ventilation.

PROTECTIVE EQUIPMENT: When handling or using **Mi-Phos™ M GR** or its solutions, wear rubber apron, rubber boots, rubber gloves, chemical safety goggles, and face shield. Wash thoroughly after use. Wash clothes before reuse. Store in tightly closed containers away from feed and food products.

FIRST AID: In case of skin contact: immediately flush with large amounts of water for at least twenty minutes. In case of eye contact, immediately flush with large amounts of water for at least twenty minutes and call a physician. If swallowed, call a physician immediately. If inhaled, remove victim to fresh air and call a physician.

SPILL OR LEAK: Wear protective equipment during cleanup of a spill or leak. Absorb with an inert material such as sand, earth, or vermiculite. Dispose of residue consistent with federal, state, and local regulations.

REQUIRED READING: **Mi-Phos™ M GR** is for industrial use only. Read Material Safety Data Sheet and product label before using. Also, follow supplier's recommendations for all other chemicals mentioned in this technical bulletin.

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.