Product Bulletin
Product Name: Mi-Phos M GR
Part A & B
Product Code: 2203001/2203004
Revision Date: June 19, 2020

Mi-Phos™ M GR

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

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.

Features & Benefits

Two component system	Better pH control
ROHS and REACH compliant	Reduction of hazardous chemicals
Produces fine, dense, uniform phosphate crystal	Uniform phosphate coatings

Typical Applications

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

Operating Conditions

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°F to 190°F. Higher temperatures tend to produce more grain refinement at the expense of shorter solution life.

pH	8.5 – 10.0
Temperature	180°F – 190°F
Contact time	5 – 10 min

Control Method

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.*

Waste Disposal

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.

Mi-Phos M GR is for industrial use only. Read 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.

Our people. Your problem solvers.

For more information on this process please call us at
1-800-648-3412
or techservice@hubbardhall.com