**MANGANESE PHOSPHATE**

**Procedure for Parkerizing/Phosphating Metals That Contain Iron**

This product will treat metals that contain iron, excluding chrome, stainless steel, aluminum or powder steel castings.

**Equipment Needed:**

1. Tank made of stainless steel, Pyrex glass, or enameled steel. Gray and white porcelain roasting pans work well. Plastic can be used, as long as an internal heat source is used.
2. Thermometer that measures up to 200oF
3. Measuring cup (ounces)
4. Stainless steel or rubber coated tongs (8 inches or more)

**Directions:** (Deviation from the following steps may cause spotting, streaking, or color variation)

1. Clean all grease and oils from the metal with an alkaline cleaner (**lye 10%** -or sodium hydroxide- and **water 90%** mix) or Easy-Off Oven Cleaner. After cleaning, rinse with water and dry. **Special note: This step is not required. Only perform this step if there is an excessive amount of grease and oils on the part. This may help the blasting process to eliminate any foreign contaminants.**
2. Glass-bead, bead blast, aluminum anodize, or sandblast the parts prior to mixing the solution. The metal has to be etched for the phosphate to chemically bond (glass beading or bead blasting is recommended because it produces a smoother finish).

**NOTE:** Parts should be treated no longer than 2-3 hours following the etching process (Step 2). It is extremely important: **DO NOT TOUCH PART WITH BARE HANDS** and **DO NOT USE CLEANERS OR RINSES AFTER SANDBLASTING** as this will leave a residue and create a spotty or streaky finish.

1. Mix ratio is **14 OUNCES** of concentrate with **1 GALLON** of water (which is 128 ounces). Make sure to mix enough solution to completely cover the parts. **Special Note: Heat the water first to 190-200oF before adding the concentrate (maintain heat to the “bath” during the process).** Once the proper water temperature is reached, add the concentrate, and then submerge the parts.
2. While the parts are in the solution and fizzing, rotate every few minutes or so to get a good, even coating. After the parts stop fizzing and the bubbles stop forming on the metal, remove the parts.

**NOTE: I recommend leaving the parts in the bath for between 8 to 10 minutes, even after the fizzing action has stopped. This may promote a slightly darker finish, but is not a guarantee.**

1. **Immediately** spray parts with WD40 when removing from bath, ensuring the surface is completely covered, then wipe dry. **Repeat this step 3 times to ensure all mineral salts are removed.**

**NOTE:** Completely coating the parts several times with WD-40 will stop iron streaking. It will allow the phosphates to settle into the metal pores deeper, which can promote a slightly darker finish.

This product can be reused if strained through a paint strainer and rebottled in a plastic container. A neutralizer or stop solution is not needed with this product, unless you are ready for disposal.

**WARNING!! Use CAUTION with this and ALL chemicals. Use of face protection plus rubber gloves is recommended. If contact with skin occurs, flush with water IMMEDIATELY.**