



**Metal Finishing Systems**

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**MICROLOK® AO METAL COATING PROCESS**

**For Iron & Steel**

**(Patented)**

**Operating Instructions**

**PRODUCT DESCRIPTION**

The MICROLOK® AO Process operates at 150° F to form a non-dimensional aluminum oxide finish on iron/steel that is silver/black in color and tightly bonded to the substrate. The finish has a porous crystal structure that absorbs a lubricant or rust preventive topcoat, giving it inherent break-in lubricity and anti-galling properties. The MICROLOK AO solution contains no EPA regulated ingredients and operates at a moderate pH 4. As a result, the process is easy and safe to operate and the rinse waters are regarded as sewerable, without waste treatment. The finish is stable to 1400° F and causes no hydrogen embrittlement.

**OPERATING CONDITIONS**

Bath Make-up	10% by volume, then adjust pH to 4-5 using MICROLOK pH Adjustment Solution (about 3 gallons per 100 gal bath)
Operating Temperature	150° F
Equipment Construction	Tank: Polypro or 304 Stainless Heater: 304 stainless or Quartz
General or Direct Ventilation	Desirable, but not required
Solution Filtration	Desirable. Use acid-proof pump and 50-100 micron filter element.

## **PROCESSING PROCEDURES**

For most parts, the MICROLOK AO process utilizes the following sequence:

1. **CLEAN** the parts for 5 minutes in SAFE SCRUB® ST biodegradable liquid cleaner, mixed at 20% by volume; 150° F.
2. **RINSE** thoroughly in clean tap water; 20 seconds.
3. **APPLY MICROLOK AO COATING** by immersing parts for 5-10 minutes in MICROLOK AO working bath at 150° F.
4. **RINSE** thoroughly in clean tap water; 20 seconds.
5. **SEAL** in appropriate rust preventive, such as DRI TOUCH® AMBER IRP2 non-tacky rust preventive, or other appropriate rust preventive. Allow to dry.

Please consult your BIRCHWOOD CASEY representative for guidance if necessary.

## **BATH MAINTENANCE**

As the process bath operates, its concentration will gradually diminish, the reaction will slow down and the pH will gradually rise. There will also be some water loss due to evaporation. To keep the bath operating properly, these losses must be replaced by regular additions of tap water and fresh MICROLOK AO concentrate.

The recommended maintenance procedure calls for the addition of tap water, with stirring, to restore normal operating levels. Then, measure the pH and add enough MICROLOK AO concentrate to bring the pH back down to 4.0-5.0.

## **PACKAGING AND STORAGE**

5 and 55-gallon plastic, non-returnable containers. Store indoors in closed containers.

***Before Using This Product – Please Read, Understand and Follow all the Precautions shown on the Product Label and on the Material Safety Data Sheet.***

**The Material Safety Data Sheet is found on our website: [www.birchwoodcasey.com](http://www.birchwoodcasey.com)**

**Always Apply Appropriate Labels to any Container used to Store or Apply Product.**

**NOTE** The information contained herein is provided in good faith and is believed to be correct. However, Birchwood Laboratories, Inc. makes no representation as to the comprehensiveness of accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgment in determining its appropriateness for a particular purpose. Birchwood Laboratories, Inc. is not responsible for damages of any kind resulting from the use of or reliance upon such information.

MICROLOK® AO Process  
MICROLOK ® AO pH Adjuster  
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