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**TRU TEMP® STAINLESS Low Temperature Black Oxide**  
Operating Instructions

**PRODUCT DESCRIPTION**

TRU TEMP® Stainless Low Temperature Black Oxide Process operates at 200 – 210° F and forms a durable black oxide finish on stainless steel alloys.

TRU TEMP® Stainless is used as part of a two-stage chemical reaction, beginning with an activation step with a dilute muriatic acid solution. The stainless-steel surface is then oxidized to form the uniform black coating that can be sealed with an appropriate rust preventive topcoat for optimum appearance and corrosion resistance.

**OPERATING CONDITIONS**

Bath Make-Up  
Operating Temperature  
Equipment Construction

TRU TEMP® Stainless, use as received  
200 – 210° F.  
Tank: Mild steel, with 1 – 2” insulation.  
Heater: 304 stainless immersion heater.  
- Use 200 watts per gallon of bath.  
Racks, baskets, barrels: Mild steel, Polypro.

Bath Circulation  
Ventilation  
Refill of Evaporative Losses  
CAUTION

Desirable. Use a stainless steel pump or impeller.  
Desirable (fumes have no chemical content)  
Desirable: Deionized or RO purified water.  
Keep all forms of copper, brass, zinc & aluminum out of the bath.

## **BLACKENING PROCEDURES**

The TRU TEMP<sup>®</sup> Stainless Low Temperature Black Oxide process utilizes the following sequence:

1. **CLEAN** the parts in SAFE SCRUB<sup>®</sup> ST, mixed at 10-20% v/v and operated at 150° F. Typical immersion time of 8 minutes.
2. **RINSE** in clean flowing water; 30 seconds.
3. **ACTIVATE** in muriatic acid, 10-50% solution; Room Temp; 0 – 10 minutes.
4. **RINSE** in clean flowing water; 30 seconds.
5. **BLACKEN** in TRU TEMP<sup>®</sup> Stainless bath; 200 – 210° F; 20-45 minutes.
6. **RINSE** in clean flowing water; 30 seconds.
7. **SEAL** in a rust preventive topcoat appropriate to the end use of the article:  
Use DRI TOUCH<sup>®</sup> AMBER IRP2 solvent-based sealant for dry-to-touch finish or use SHEATH<sup>®</sup> WS12 water-soluble oil (at 15% by volume; 130° F), for oily finish.

## **BATH MAINTENANCE**

As the TRU TEMP<sup>®</sup> bath operates, its concentration will gradually diminish. In addition, there will be a significant loss of water to evaporation. Both these components must be replaced to keep the bath operating normally. Normal maintenance calls for daily additions of clean water (DI or RO water is preferred) with stirring, to restore normal operating levels. Then, the bath can be titrated for total alkalinity to determine the strength of the solution and the quantity of replenishment needed.

**CAUTION:** Keep all forms of copper, brass, zinc and aluminum out of the tank.

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

**The Safety Data Sheet can be found on our website:**

**<https://www.birchwoodtechnologies.com/Downloads/Safety.html>**

**Use Appropriate Warning Labels on any Container used to Store or Apply this Product.**

**NOTE:** The information contained herein is provided in good faith and is believed to be correct as of the date below. However, Birchwood Laboratories LLC makes no representation as to the comprehensiveness or 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. Accordingly, Birchwood Laboratories LLC will not be responsible for damages of any kind resulting from the use of or reliance upon such information.

TRU TEMP<sup>®</sup> Stainless Black Oxide (Product Numbers 622251, 622258)

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