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TECHNICAL DATA

B/Ox 311 Trouble Shooting

Titration of the **B/Ox 311** is a preferred method for controlling the bath. As the bath ages the pH will increase because of the metals. Copper, Zinc, Tin and Iron will dissolve into the **B/Ox 311** bath. Thus, taking pH is another fast analysis method for bath life. If an AA or ICP is available, even more precise control can be achieved.

pH:

A new bath typically is 1.5 -1.8 depending on % by volume of **B/Ox 311** (5-20% by volume) and pH of water. As the pH increases approaching 2.4-2.7 the **B/Ox 311** bath will produce more of a browner color. Adding Phosphoric Acid to the **B/Ox 311** bath can extend bath life (lower pH to 1.5 -1.7).

Metals dissolving into the bath:

Zinc metal at 1,000 ppm you will notice a browner color. At 2000-2500 ppm zinc it is time to make up a new bath. Some users keep 10% by volume of the old bath to seed the new bath to keep the color less black than a brand-new **B/Ox 311** bath.

Iron from bare steel surfaces such as inside of steel tubing causes discoloration as the iron builds up. At 1000-3000 ppm you will find it necessary to make up a new bath. Iron slows down the blackening reaction and causes a discoloring.

Copper metal: If the copper metal grows 33%-60% more than the initial bath make up you will have difficulty achieving the initial color of **B/Ox 311**. In special instance, **EPi** can provide **B/Ox 311** with less copper, **B/Ox 311 LCu** for replenishing the bath.

Acid Dips:

Leaded brass use **E -Pik 215** fluoride base for improved adhesion vs. sulfuric acid.

After rinsing cyanide plated parts, need to use 10% by volume Sulfuric Acid or **E -Pik 215** at 8-16 ounce per gallon. In cyanide barrel plating it is important to change acid each shift or daily. **NOTE:** Cyanide is an excellent stripper of **B/Ox 311** but avoid getting it into the **B/Ox 311** bath. Cyanide can cause color problems.

NOTE: Do not exceed 105°F for **B/Ox 311** bath temperature.

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