

ALPHA® Anti-Oxidant Additive

Dross Reducing Elements

ALPHA SACX, SACX Plus and **SnCX Plus** alloys contain an **ALPHA Anti-Oxidant Additive**. This additive reduces the oxidation of the solder, but due to preferential oxidation over Tin, Silver and Copper it is consumed in the process. For most medium / high volume operations, the level of this dross reducing additive is naturally kept in equilibrium by the regular addition of fresh solder. For some lower volume operations where the wave is on for extended periods and the alloy usage is low, the levels may need to be replenished by the small addition of the **ALPHA Anti-Oxidant Additive**. The recommended limits for the **ALPHA Anti-Oxidant Additive** in the alloy are 0.002 – 0.015% (20 – 150ppm). The need for this can be reduced by following the guidance on the Reference Bulletin “Wave Set Up to Minimize Dross”.

How do I know if I need to make this Adjustment?

As part of Alpha’s Pot Rite analytical service, our laboratories are set up to check the concentration of the **ALPHA Anti-Oxidant Additive** on appropriate pot analysis. If they find that the concentration has dropped below the minimum, then they will automatically advise the addition of the **ALPHA Anti-Oxidant Additive**.

Other signs that can indicate that adjustment is required are:

- A change in the appearance of the dross from dry grey / black powdery oxide to an emulsified mix of powder and metal (“wet dross”).
- Yellow coloration on the surface of the metal.
- Dross appearing on the surface of the wave.
- More dross than normal being removed from the solder pot.

If any of these symptoms occur, take a sample and send this to your local Alpha Assembly Solutions laboratory for a full analysis. They will confirm if you need to take action.

What is the Anti-Oxidant Additive?

This is an alloy of Tin and the anti-oxidant elements. It is **not a powder or oil** and must alloy with the solder to be effective.

How much ALPHA Anti-Oxidant Additive should I add?

- For every 100kg (lb) of alloy in the pot, add 0.6kg (lb) of **Item No. 150244 (CB857 Antioxidant 1% 1KG Rectangle)**.
- For every 100kg (lb) of alloy in the pot, add 0.2kg (lb) of **Item No. 1022754 (CB537 Antioxidant 3% 1KG Round)**.

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How do I add the ALPHA Anti-Oxidant Additive?

- 1) Temperature of pot should be no less than 260°C (500°F).
- 2) Turn off pumps.
- 3) De-dross the pot and remove all the oxides from the surface.
- 4) Add pellets to the solder pot at approximately 1lb (500g) at a time, stir with a ladle while adding.
- 5) Ensure that all the pellets have dissolved before switching on the pumps. *Pumps may be damaged if undissolved pellets are pulled into them.*
- 6) Turn on pumps and circulate for 15min to ensure full mixing.
- 7) Remove any oxides formed.
- 8) Take base line sample. Adjust **ALPHA Anti-Oxidant Additive** amount if needed.

Can I use dross reducing powders and oils with ALPHA SACX, SACX Plus and SnCX Plus alloys?

We do not recommend the use of these products with these alloys. There is a risk that these products will react with the **ALPHA Anti-Oxidant Additive** in an unknown way and potentially neutralize their activity.

If you have any questions regarding this subject, please contact your local Sales Office for guidance.

Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency directory assistance Chemtrec 1 - 800 - 424 - 9300.

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