

Nickel 10 Additive for SN100C

Introduction

Nickel 10 (Ni10) additive is used to increase the nickel (Ni) content in SN100C solder pots. Nickel stabilizes the Cu_6Sn_5 intermetallic in SN100C solders, and helps to refine the grain structure of the SN100C solder joint. Nickel also improves the fluidity of SN100C leading to improved wetting and drainage of the solder. Nickel 10 additive has a nominal nickel concentration of 10% by weight dissolved in tin.

Attributes

- Stabilizes the Cu_6Sn_5 intermetallic in SN100C solder.
- Refines the grain structure of the SN100C solder joints.
- Improved fluidity leading to improved wetting and drainage.

| Additive Packaging | Part Number | Net Weight |
|--------------------|-------------|------------|
| Jar of nuggets | NI10J | 1 Kg |

Compatible Products

SN100C bar solder.
AO1000 anti-oxidant additive.

Storage and Handling

- Shelf life is 5 years when the additive is stored between 50 to 90 °F (10 and 32 °C) in a standard warehouse or office environment.
- Store inside of the original packaging to prevent contamination from dust or moisture.

Application

Nickel 10 should be added to the SN100C solder bath based on analysis of the nickel concentration and the weight of solder in the solder pot. Nickel 10 additive contains a nominal nickel concentration of 10% by weight. Calculations to determine the addition of Nickel 10 are shown below:

$$\text{Ni10 addition (lbs)} = (0.050 - (\text{Ni \% wt})) \times (\text{Solder pot weight in lbs}) \times 0.10$$

$$\text{Ni10 addition (grams)} = (0.050 - (\text{Ni \% wt})) \times (\text{Solder pot weight in lbs}) \times 45$$

Static solder pots:

Allow 45 - 60 minutes for the Ni10 to completely dissolve before use. Add the Ni10 additive one piece at a time to aid in dissolution. Mixing will speed dissolution of the Ni10 into the molten solder. Mixing will also help to distribute the nickel uniformly throughout the solder pot.

Wave and selective solder pots:

Additions should be made to the side pot and not directly into the wave when possible. Add the Ni10 additive one piece at a time to aid in dissolution. Allow 45 - 60 minutes for the Ni10 to completely dissolve before use. The wave or selective solder pump should be run to speed dissolution, and to help distribute the nickel uniformly throughout the solder pot.

FCT Solder provides solder analysis and reporting services to our customers. Regular analysis of SN100C solder is recommended. Contact customer service at cs@fctassembly.com for more details.

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| Safety |
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Wear heat resistant gloves and safety glasses when working around hot solder. Be careful to avoid splashing molten solder during additions. Follow the guidelines in the Safety Data Sheet (SDS).