ALPHA® ECO RADSOL T1347

Industrial Flux

DESCRIPTION

ALPHA Eco Radsol T1347 is a non-corrosive residue flux formulated primarily for Copper - Brass heat exchanger manufacture. It has been developed from the environmentally friendly ALPHA Radsol 2000 range of fluxes and combines all the advantages of this range in one "all can do" product.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- Versatile – A wide range of soldering process types can be accommodated with this one product
- Zinc Chloride Free – Formulated without heavy metals thus ensuring minimal corrosive residues after soldering
- Non-Carbonizing – Will not leave solid or oily black residues
- Low Free Acid Content – Can be used for hand soldering operations without causing eye irritation or objectionable odor (assuming normal fume extraction)
- High Temperature Stability – Ideal with high temperature and lead-free soft solders
- Will Not Form Stable Chelates – Used flux or waste water contaminated with heavy metals from soldering can be treated by normal neutralizing waste disposal plants without risk of chelate complexing (guarantees complete removal of heavy metals from properly treated liquid waste)
- Health and Safety – All constituents of ALPHA Eco Radsol T1347 are free from known dermatological or respiratory risks

APPLICATION GUIDELINES

Preparation: Always use plastic or glass reinforced plastic tanks (not nylon) to hold ALPHA Eco Radsol T1347 flux.

Flux Application: ALPHA Eco Radsol T1347 is suitable for use with conventional Tin/Lead or Lead-free soldering on Copper and Copper alloy components, primarily radiators. Application is by brushing, spraying or dipping, as required. Dilution with tap water is recommended for most applications.

Major areas of use – radiator production for:

1. Tube manufacture
2. Core baking
3. Header plated dipping
4. Hand soldering sub-assembly and tank to plate operations

Residue Removal: ALPHA Eco Radsol T1347 flux evaporates at soldering temperature – any residues remaining are harmless and non-corrosive, provided all the flux has reached soldering temperature. Water rinsing may be required where liquid flux remains on the component after soldering (air under water testing is usually adequate).

The term non-corrosive flux as applied to ALPHA Eco Radsol T1347 indicates that no corrosive residues remain after the soldering temperatures have been reached – all active constituents have boiled off leaving the soldered components free from harmful residues.

1. Tube Manufacture

a) Tinning (solder coat) before forming:
ALPHA Eco Radsol T1347 at 1 part flux to 2 parts water.

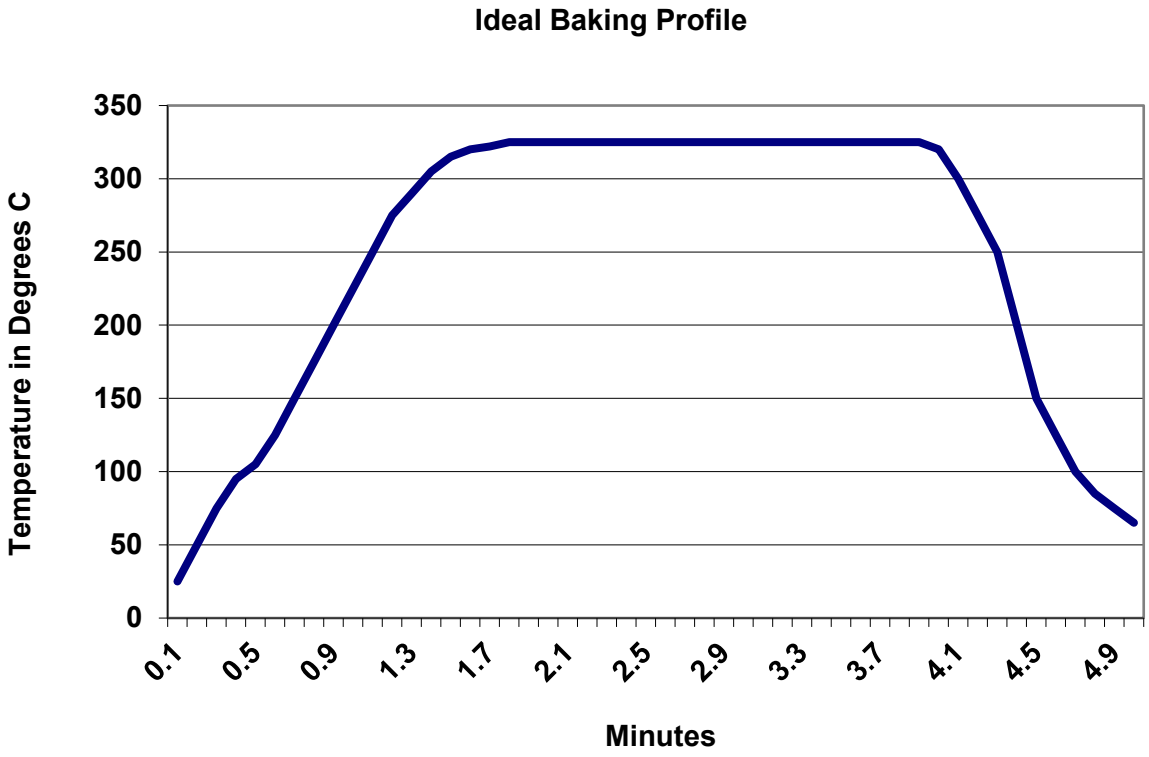
b) Tinning after forming:
ALPHA Eco Radsol T1347 at 1 part flux to 2 parts water.

The use of clean strip is essential. Flux strength may need to be increased if problems with staining or excessively oily strip occur.

2. Core Baking

The properties of ALPHA Eco Radsol T1347 are shown to their best advantage in this process. Baked cores do not corrode or show “greening” and can be left for several days without the need for washing. ALPHA Eco Radsol T1347 has a limited life at the soldering temperature and it is imperative that the baking oven heats the cores to the soldering temperature quickly so that the flux does not “dry-off” before soldering occurs.

The ideal oven baking profile is shown below. In general terms, the faster the temperature rise to reach soldering temperature the better the result. Heating at temperatures greater than the set operating temperature should be avoided at all costs.



Recommendations for flux dilution will vary according to the types of tubes used for manufacture and the efficiency of the oven. As a general guideline only,

a) Radiators built with welded or lock seam tubes soldered after forming:
ALPHA Eco Radsol T1347 at 1 part flux to between 5 and 15 parts water.

b) Radiators built with tubes soldered before forming:
ALPHA Eco Radsol T1347 at 1 part flux to between 3 and 8 parts water.

The dilution rates are set with a range to suit the individual needs of the manufacturing processes used. As a general rule, the lowest strength flux mixture compatible with satisfactory bonding should be the target.

Flux application by immersion is recommended. All areas should be wetted within immersion times of about 1 minute. It is important to remove as much flux as possible before the core is placed in the oven and either shaking or blowing through the core with an air blast are the best methods of achieving this.

1. **Header Plate to Core Soldering**
   a) End dipping (immersion of header plate in solder bath):
   ALPHA Eco Radsol T1347 at 1 part flux to 2 parts water.

The dipping process must just cover the header plate. Neither flux nor solder should contact the fin material so that all flux used is heated to the soldering temperature and is therefore made inactive.

   b) For other methods of header plate soldering, the same principles apply.

2. **Hand Soldering Sub-Assembly and Tank to Plate**
   a) Detail or Sub-Assembly Soldering (e.g. pipes, filler necks, etc.):
   ALPHA Eco Radsol T1347 at 1 part flux to 3 parts water.
   b) Tank Soldering for manual or automatic, gas or high frequency methods, using solder stick, wire or tape:
   ALPHA Eco Radsol T1347 at 1 part flux to 3 parts water.

TECHNICAL DATA

Item	Typical Values	Item	Typical Values
Appearance	Clear, colorless to pale yellow liquid	Flash Point	Not applicable
Specific Gravity @ 20 °C	1.15	Shelf Life (from Date of Mfg.)	2 Years
pH	1.0	Packaging Size	25, 200 Liters
Odor	Slightly acrid		

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

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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 safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588