



Technical Bulletin

HA-405 Hot Air Flux

I. Description:

HA405 is a specially formulated, high-viscosity flux for hot air leveling. The viscosity is controlled to minimize de-wetting on surface mount pads and is formulated to insure first pass coverage on difficult boards.

Benefits:

1. High viscosity to improve heat resistance and decrease solder smear.
2. Excellent solder cosmetics.
3. First pass coverage.
4. Non-Foaming. Easy to rinse.
5. Non VOC flux.

Application:

HA405 has a high flash point combined with good water solubility. When used, this flux should not be diluted or mixed with water or other chemicals. In automatic equipment, follow manufacturer's suggestions for equipment use. When used in manual machines, dip boards in flux and squeegee off excess (a thin film of flux is all that is required) and preheat. A dwell time of 2-4 seconds is recommended for best result, depending on the type of machine and the thickness of the board. Always rinse boards after processing because the flux remains active and will cause corrosion. DI water is recommended for final rinsing to lower ionic contamination. Rinse aids can also aid in reducing ionic residues if necessary.

II. Operating Parameters

Make-Up	100% HA405
Temperature	Room temperature
Immersion Time	Not applicable
Process	Batch
Agitation	Not necessary
Ventilation	Advised
Tanks	Polypropylene, CPVC
Racks and Baskets	PVC Coated
Heaters	Not necessary
Filtration	Not necessary

III. Physical Properties

Specific gravity	1.08 – 1.12
Viscosity	150 – 190 cps
Appearance	Clear-amber liquid
pH	5% solution (1.0 to 3.5)
Odor	Mild
Flash Point	>550F

IV. Control Procedures

Consumption of flux is normally limited by drag out. If desired, specific gravity can be used as a rough measure of flux activity. Specific gravity should be controlled within 0.03 units. Dragging water in will lower the specific gravity and evaporation of water in flux will increase the specific gravity.

V. Analysis

Specific gravity analysis can be done if desired (see section IV.)

Specific Gravity Procedure:

1. Tare a 100 mL volumetric flask on a balance.
2. Fill the flask to the mark with flux.
3. Weigh the filled flask and record the mass to 0.1 grams.
4. Calculation:

$$\text{Specific gravity (g/mL)} = (\text{mass of flux in grams}) / 100 \text{ mL}$$

VI. Safety and Storage

HA405 is acidic and should be handled with care. Wash affected areas for 15 minutes under cool running water. Avoid open flames. Do not store in direct sunlight, high temperature or below freezing. Consult the MSDS sheet for additional information.

VII. Waste Treatment

Hot Air Fluxes should not be bled into waste treatment systems, especially resin columns and filtration units. Normally, the spent flux is pH neutralized with caustic soda and sent to a hazardous materials waste handler for fuel blending. Consult with local officials for further waste disposal regulations.

Please ask a Florida CirTech technical sales rep. for more information regarding waste treatment of this chemistry and our complete line of waste treatment line if additional help or information is desired.

VIII. Miscellaneous

This product is available in 5-gallon pails and 55-gallon drums.

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