MacDermid Alpha ELECTRONICS SOLUTIONS

TECHNICAL DATA SHEET

KESTER® 2222-CL SOLDERING FLUX

Organic, Water Soluble, Liquid Flux

DESCRIPTION

Kester 2222-CL Soldering Flux is a high activity, organic acid flux designed for automated wave solder applications where a more aggressive flux is required to solder difficult assemblies. The flux will provide maximum capillary wetting action up plated through-holes, making it ideal for use on multilayer boards. Along with this enhanced activity, 2222-CL flux produces bright, shiny solder joints and the residue after soldering is effectively removed in standard water cleaning systems.

Polyglycols, which can be detrimental to board surface insulation resistance, are not present in the flux formula. This flux is also suitable for some dip tinning applications where a high activity flux is required.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

- High activity
- Minimizes icicling and bridging
- Chemically compatible with most solder masks and board laminates
- Ideal for multilayer boards
- Classified as ORH1 per J-STD-004

ROHS COMPLIANCE

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive, 2015/863 for the stated banned substances.

TECHNICAL DATA

Category	Results	Procedure/Remarks
Physical Properties		
Specific Gravity	0.951 ± 0.005	Anton Paar DMA 35 @ 25 °C
Percent Solids (typical)	17	Tested to J-STD-004, IPC-TM-650, Method 2.3.34
Flash Point	29 °C (84 °F)	
Reliability Properties		
Copper Mirror Corrosion	High	Tested to J-STD-004, IPC-TM-650, Method 2.3.32
Corrosion Test	High	Tested to J-STD-004, IPC-TM-650, Method 2.6.15
Silver Chromate	Fail	Tested to J-STD-004, IPC-TM-650, Method 2.3.33
Chloride and Bromides	3.0%	Tested to J-STD-004, IPC-TM-650, Method 2.3.35
Fluorides by Spot Test	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.3.35.1
Surface Insulation Resistivity (SIR), IPC (Typical)	Pass	Tested to J-STD-004, IPC-TM-650, Method 2.6.3.3

	Blank	2222-CL
Day 1	$1.2*10^{10}$ Ω	$2.2*10^{8}$ Ω
Day 4	$1.5*10^{10}$ Ω	$1.3*10^{9}$ Ω
Day 7	$1.9*10^{10}$ Ω	$2.9*10^{9}$ Ω

APPLICATION

2222-CL can be applied to circuit boards by a spray, dip, foam or wave process. An air knife after the flux tank is recommended to remove excess flux from the circuit board and prevent dripping on the pre- heater surface.

PROCESSING GUIDELINES

The optimum preheat temperature for most circuit assemblies is 82 to 96 °C (180 to 205 °F) as measured on the top or component side of the printed circuit board. Dwell time in the wave is typically 2 to 4 seconds. The wave soldering speed should be adjusted to accomplish proper preheating and evaporate excess solvent, which could cause spattering. For best results, speeds of 1.1 to 1.8 m/min (3½ to 6 ft/min) are used. The surface tension has been adjusted to help the flux form a thin film on the board surface allowing rapid solvent evaporation.

Flux Control

Specific gravity is normally the most reliable method to control the flux concentration. To check concentration, a hydrometer should be used. Control of the flux in the foam flux tank during use is necessary for assurance of consistent flux distribution on the circuit boards. The complex nature of the solvent system for the flux makes it imperative that Kester 4662 Thinner be used to replace evaporative losses. When excessive debris from circuit boards, such as board fibers and from the airline buildup in the flux tank, these particulates will redeposit on the circuit boards which may create a buildup of residues on probe test pins. It is, therefore, necessary to clean the tank and then replenish it with fresh flux when excessive debris accumulates in the flux tank.

Cleaning

No neutralizer, saponifiers or detergents are necessary in the water wash system for complete removal of flux residues. It is not recommended to use high mineral content tap water. Otherwise, tap, deionized or softened water may be used for cleaning. The optimum water temperature is 54 to 66 °C (130 to 150 °F), although lower temperatures may be sufficient.

Storage, Handling and Shelf Life

Store away from sources of ignition. Shelf life is 2 years from date of manufacture when handled properly and held at 10 to 25 °C (50 to 77 °F).

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area.

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.**

CONTACT INFORMATION

www.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