Product Description

Kester SELECT-10™ is a zero-halogen no-clean liquid flux designed specifically for the needs of the selective soldering process. Sustained activity within the flux allows for good barrel fill in challenging applications, such as refloved copper OSP boards or with difficult to solder components. Specific to selective soldering, SELECT-10™ does not spread beyond the spray pattern and will not clog the fluxer head. SELECT-10™ residues are non-tacky for improved cosmetics. SELECT-10™ is classified as ROL0 flux under IPC J-STD-004B. SELECT-10™ is classified as ROL0 per IPC J-STD-004B. SELECT-10™ is also available as a flux-pen. For a list of compatible products, visit Kester’ website or contact Kester Technical Support.

Performance Characteristics:
- Zero-halogen (none intentionally added)
- Provides good solderability under air atmosphere
- Controlled flux application, flux does not spread beyond the spray pattern
- Non-corrosive, non-conductive and non-tacky residues
- Ability to provide desired hole-fill with preheat temperatures over 140°C
- No Clogging
- Compliant to GR-78-CORE (Telcordia/Bellcore)
- Classified as ROL0 per J-STD-004B
- Pass SIR in raw and preheating condition
- Also available as a flux-pen

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive. Additional RoHS information is located at [https://www.kester.com/downloads/environmental](https://www.kester.com/downloads/environmental).

Physical Properties

Specific Gravity @ 25°C: 0.835 (typical)

Acid Number (typical): 40.0 mg KOH/g flux

Percent Solids (theoretical): 10%

Reliability Properties

Bellcore SIR, IPC: Pass;
All Readings >2.0x10¹⁰ Ω
Tested to GR-78 13.1.3
Test Conditions: 35°C, 85% RH, 4 days, 100V
Board Prepare Conditions: Room Temperature:
Dry with 80°C Preheating. Pattern up through by soldering process, pattern down through by soldering process

Electrochemical Migration (ECM):
Pass
Test Conditions: 65°C, 90% RH, 25 days, 100V
Board Prepare Conditions: Room Temperature:
Dry with 80°C Preheating. Pattern up through by soldering process, pattern down through by soldering process

Surface Insulation Resistivity (SIR):
- Copper Mirror Corrosion: Low
  Tested to J-STD-004B, IPC-TM-650, Method 2.3.2
  Test Conditions: 85°C, 85% RH, 15 days, 12V
- Electrochemical Migration (ECM):
  Pass
  Test Conditions: 65°C, 90% RH, 25 days, 100V
  Board Prepare Conditions: Room Temperature:
  Dry with 80°C Preheating. Pattern up through by soldering process, pattern down through by soldering process
- Surface Insulation Resistivity (SIR):
  Pass
  Tested to J-STD-004A, IPC-TM-650, Method 2.6.3.3
  Test Conditions: 85°C, 85% RH, 7 days, 100V
  Board Prepare Conditions: Room Temperature:
  Dry with 80°C Preheating. Pattern up through by soldering process, pattern down through by soldering process

Surface Insulation Resistivity (SIR):
- Copper Mirror Corrosion: Low
  Tested to J-STD-004B, IPC-TM-650, Method 2.3.2
- Corrosion Test: Low
  Tested to J-STD-004B, IPC-TM-650, Method 2.6.15
- Bono Corrosion Test: Pass;
  Fc=1.05%
  Test Conditions: 85°C, 85% RH, 15 days, 12V
- Halogen Content: None Detected
  Tested to J-STD-004-B, IPC-TM-650, Method 2.3.28.1

RoHS Compliance

This product meets the requirements of the Restriction of Hazardous Substances (RoHS) Directive. Additional RoHS information is located at [https://www.kester.com/downloads/environmental](https://www.kester.com/downloads/environmental).
Storage, Handling and Shelf Life

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

Cleaning

SELECT-10™ residues are non-conductive, non-corrosive and do not require removal in most applications. If residue removal is required it can be removed using commercially available flux residue cleaner. Contact Kester Technical Support for additional assistance.

Flux Application

SELECT-10™ is designed for a drop jet fluxer or ultrasonic fluxer in selective solder applications. Flux deposition should be 186-465μgr/cm² (1200-3000μgr/in²) of solids. SELECT-10™ Flux-Pen® is applied to circuit boards via Flux-Pen® for rework.

Process Considerations

<table>
<thead>
<tr>
<th>Circuit Board Process Recommendations</th>
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<tbody>
<tr>
<td>Flux deposition</td>
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<tr>
<td>Top side board temperature (bottom preheaters only)</td>
</tr>
<tr>
<td>Top side board temperature (top preheaters only)</td>
</tr>
<tr>
<td>Top side board temperature (bottom and top preheaters)¹</td>
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<tr>
<td>Recommended preheat profile</td>
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<tr>
<td>Solder contact time</td>
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<tr>
<td>Maximum soldering time in the soldering module with pre-heat at 125°C</td>
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<tr>
<td>Solder bath temperature²</td>
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¹ Board is heated from top and bottom there will be a smaller delta temperature between the top and bottom of the board and minimizing the risk of sublimation. **Caution**: Using top and bottom preheaters simultaneously does not ensure the center of the board reach proper temperature for soldering.
² The solder bath temperature is a function of the solder nozzle size, circuit board design and components.

Above information is a guideline and it is advisable to note that the optimum settings for a given assembly may vary and this is dependent on the circuit board design, board thickness, components used and equipment used. A design of experiment is recommended to be done to optimize the soldering process.

SELECT-10™ Flux-Pen® should only be applied to areas that will be fully heated by the soldering iron or other reflow tool. Care should be taken to avoid flooding the assembly. The surface tension has been adjusted to help the flux form a thin film on the board surface allowing rapid solvent evaporation.

Flux Control

SELECT-10™ is designed to be sprayed with a drop jet fluxer or ultrasonic fluxer. Incoming solderability inspection of circuit boards and components is advisable as a part of process control to maintain consistent soldering results.

Health and Safety

This product, during handling or use, may be hazardous to your health or the environment. Read the Safety Data Sheet and warning label before using this product. Safety Data Sheets are available at [https://www.kester.com/downloads/sds](https://www.kester.com/downloads/sds).