COMPONENT CLEANING

PRODUCTS: ALUMINUM ELECTROLYTIC CAPACITORS

<table>
<thead>
<tr>
<th>CLEANING AGENT</th>
<th>CLEANING CONDITIONS</th>
<th>MAXIMUM CLEANING TEMPERATURE</th>
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<tbody>
<tr>
<td>Pine Alpha ST-100S</td>
<td>Immersion, Ultrasonic, Vapor, Spraying Or Other Method Total Duration: Less Than 5 Minutes.</td>
<td>+60°C</td>
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<td>Clean Through 750H, 750L, 710M</td>
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<td>Sanelek B-12</td>
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<td>Aqua Cleaner 210SEP</td>
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<td>Techno Care FRW 14~17</td>
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<td>Isopropyl Alcohol</td>
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<td>DI Water Wash</td>
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<td>CFC Substitutes:</td>
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<td>AK-255AES</td>
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<tr>
<td>All Others **</td>
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SPRAY WASHING: Regarding spray washing, please use caution since the sleeve (on leaded components) may expand or swell from the angle and/or the strength of the spray.

DRYING – BAKING: After PCB board cleaning process has been completed, the capacitors should be dried using hot air for a minimum of 10 minutes. Hot air temperature should not exceed softening temperature (+80°C) of the sleeve. Insufficient drying after water rinse may cause appearance problems, such as sleeve shrinkage.

NOTES:

1. Please monitor for contamination of cleaning agents (electric conductivity, pH, specific gravity, water content, etc.) trapped underneath the component or sleeve, and on PCB surface.
2. After cleaning, do not store the capacitors in an atmosphere containing the cleaning agent.
3. Depending on the cleaning method, the marking on a capacitor may be erased or blurred.
4. The following solvents cannot be used, as they may damage the components:
   - Halogenated solvents; (potential for component failure due to electrical corrosion)
   - Alkali based solvents; (potential for dissolution of aluminum case, as aluminum is weak against alkali)
   - Petroleum based solvents: (potential for rubber seal material deterioration and component failure)
   - Xylene: (potential for rubber seal material deterioration and component failure)
   - Acetone: (potential for damage to sleeve and removal of ink markings)

** - NIC Ultra-miniature Series: NSR, NRE-S, NRE-SW, NSRW, NLE, NLE-S, NRE-SN, NRE-SX, NSRZ and NSRN

** - Please review compatibility of all other CFC substitute cleaning solvents with NIC technical team: tpmg@niccomp.com
COMPONENT CLEANING / PRODUCTS: ALUMINUM ELECTROLYTIC CAPACITORS

4. (continued) The following solvents cannot be used, as they may damage the components

Chlorinated Solvents:
- Methylene Chloride (Dichloromethane)
- 1,1,1-Trichloroethane (legislated phase-out of 1,1,1-trichloroethane occurred in many countries in 1995)
- Perchloroethylene
- Trichloroethylene

Bromide Based Solvents
- n-propyl bromide (alternative for traditional chlorinated solvents)
  - Leksol™ / Solvon™
- 1-Bromopropane

5. Chlorine-free flux, adhesives, tapes, coatings and sealants must be used

6. Please ensure to review cleaning method(s) of high voltage (≥ 160VDC) rated series, and also low ESR ledged type product series (i.e. NRSG, NRSH) with NIC to assure compatibility

Please review cleaning with all other solvents and conditions with NIC TPMG. / Contact: tpmg@niccomp.com