TECHNICAL DATA SHEET

RS 217-3841
Aqueous Cleaner

RS 217-3841 meets the requirements of both military and commercial electronics manufacturing companies across the world. It is an ideal cleaner for removing flux residues from PCBs and is especially suited for use in ultrasonic equipment.

- Removes flux residues and other contaminants; contains a corrosion inhibitor
- Ready to use for ultrasonic applications; no dilution required
- Non-flammable product, 100% ozone friendly; suitable for use in standard cleaning equipment

Approvals   **RoHS-2 Compliant (2011/65/EU):**   **Yes**

Typical Properties:

Appearance	Blue liquid
Boiling point (°C)	98
Freezing Point (°C)	-5
Density (g/ml)	1.03
pH	11.8
Conductivity @ 18°C (mS)	1.44
Flash Point (°C)	None

Packaging   **Order Code**
5 Litre bulk   RS 217-3841

Directions for Use
RS 217-3841 has been specifically developed for use in 3 or 4 stage batch cleaning systems using ultrasonic or spray-under-immersion. It is supplied at a concentration suitable for immediate use and further dilution is not recommended. In typical usage times and temperatures, RS 217-3841 has good compatibility with most materials used in the electronics industry, and with materials used in cleaning equipment. For sensitive plastics such as polycarbonate and ABS, testing is recommended to confirm compatibility.

Stage 1 - Cleaning: Typically 3-5 minutes with agitation. RS 217-3841 is designed to be used at ambient temperature, though if required this can be increased up to 45°C.
Stage 2 – Tap water rinse: The temperature of the rinsing solution can be ambient, but higher temperatures in addition to agitation, will accelerate and improve rinsing.
Stage 3 – Deionised water rinse: This may either consist of a re-circulating rinse or a spray system that is activated when the PCBs leave the tap water rinse. If military standard cleanliness is not required, this deionised rinse may not be necessary, though the PCBs may show some white streaking due to tap water impurities.
Stage 4 – Drying: The length of time required to dry the PCB depends on the circuit design and the efficiency of the drying unit itself. This is enhanced by equipment that uses high air flow as opposed to 'heat only' systems. In general, this stage takes approximately 5 minutes at 90°C. Air-knives can be used as an optional extra to reduce temperature or total energy required.

Evaluation of Flux Concentration - Conductivity Method
The electrical conductivity of a RS 217-3841 solution will increase with flux concentration (and other ionic contaminants). As an alternative, pH, refractive index or titration are also suitable methods for monitoring the contamination level in RS 217-3841.

Estimated RS 217-3841 usage
Usage will depend greatly on PCB design, however it can be estimated from the concentration of flux used and the size/number of boards cleaned. The table below lists the typical amount of contamination expected on a PCB.

Flux Concentration	Contamination per square metre of PCB
20%	11 - 13 grams
10%	5 - 8 grams
5%	2 - 5 grams

RS 217-3841 will absorb a maximum of 5% - 15% of its weight of flux while still cleaning to military standards. In addition to the RS 217-3841 that it is used to absorb the flux, small amounts of cleaner will remain on the board and be transferred into the rinse stage. This is commonly known as drag-out, which typically results in loss of around 100ml/m^2 of board cleaned.

Disposal
The contamination levels after a single use are normally low enough to allow the solution to run directly to the drain or recycled through a carbon filter; this will prevent the rinse water becoming progressively more contaminated. The local water authority should be consulted for confirmation of this.