



TECHNICAL DATA SHEET

RS 241-2433 Aqueous Based Electronic Cleaning Agent

This product is ideally suited for the removal of flux residues and many other cleaning applications that do not contain sensitive metals and substrates. Used for cleaning metals prior to plating operations to provide an extremely clean and slightly roughened surface, allowing excellent bonding of the plated material. It is ready to use and is water-based, non-flammable, with biodegradable solvent blends designed to clean to within military cleanliness standards, (ANSI-J-001B/IPC TM-650).

- Removes flux residues and other contaminants; suitable for micro-etching processes prior to plating
- Good for general degreasing applications; ideal for applications that do not contain sensitive metals
- 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	Green Liquid
	Boiling Point (°C)	98
	Flash Point (°C)	None
	Freezing Point (°C)	-5
	Density @ 20°C (g/ml)	1.0
	pH	11.5
	Conductivity @ 18°C (mS)	1.18

<u>Packaging</u>	<u>Order Code</u>
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25 Litre	RS 241-2433
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Directions for Use

RS 241-2433 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 241-2433 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 241-2433 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.

For ferrous metal cleaning operations it is possible to add a rust inhibitor (Code: RS 235-537) at 0.5% into this stage. This will prevent flash rusting of ferrous metals when they are dried at high temperatures.

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 241-2433 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 241-2433.

Estimated RS 241-2433 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 241-2433 will absorb a maximum of 5% - 15% of its weight of flux while still cleaning to military standards. In addition to the RS 241-2433 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/m² 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.