

SURCLEAN

Electronic Production Materials

SPR2050 SEMI-AQUEOUS FLUX CLEANER

Surclean SPR2050 cleaner is a semi-aqueous solution formulated for fast, easy removal of flux residues and other soils from electronic assemblies. Cleaning is achieved by a powerful custom synthesised aprotic solvent combined with dual action saponifiers. Cleaning levels easily exceed IPC and MIL requirements. Post cleaning cleanliness levels of assemblies when correctly processed can equal the SIR and electromigration parameters for the bare PCB. SPR2050 has been tested for exceptional compatibility with plastics, component markings, encapsulents and varnishes. The unique chemistry allows a low PH level. This minimises the risk of dullness or damage to soldered joints and sensitive metals. Special wetting agents allow SPR2050 to clean under connector quad flat packs and even BGA's without mechanical agitation. After cleaning, SPR2050 is quickly and easily rinsed from the assembly. It is exceptionally economical to use, particularly in batch type single or multi-tank systems, where it will continue to clean, even when heavily saturated with flux residues. SPR2050 is CFC, HCFC and phosphate free. It is ozone friendly, has zero VOC content, is low toxicity and completely biodegradable. It is non-flammable.

SURCLEAN SPR2100

Surclean SPR2100 is a strong semi-aqueous cleaning solution based on the successful SPR2050 chemistry, but specified at a higher active Solvent concentration level for enhanced removal rates of Flux residues and other soils, including some hard to clean 'no-clean' types. Due to its low foaming characteristics, it is particularly suitable for use in single or multi-tank batch type cleaning systems, but can also be effective when used in its concentrated form in dishwasher type cleaning systems. SPR2100 retains all the environmental and operator safety characteristics of SPR2050. SPR2100 can be supplied ready diluted with high purity de-ionised water or in concentrated form allowing the user to vary the dilution ratio to a level which gives acceptable cleaning results.

SURCLEAN SPR2300

Surclean SPR2300 is an exceptionally strong semi-aqueous solution based on a combination of the exclusive Surclean Aprotic Solvent Technology and a blend of water miscible solvents with dual action saponifiers. It is available with added low foam Surfactant for single and multi-tank batch type cleaning systems or with minimal Surfactant for use with fully automatic dishwasher type systems. Unlike the other SPR2000 series materials SPR2300 is used at full strength for maximum effectiveness. It is fully water rinsable and retains all the existing attributes of low toxicity, low odour, 100% bio-degradability. When used with fully automated dishwasher type cleaning systems, SPR2300 should be collected either automatically in the system sump or manually by draining before the rinse cycle. This ensures the most economical usage rate and takes advantage of all the SPR2000 series materials ability to operate high levels of residue contamination.

SPR FEATURES

1. Powerful aqueous based formulation which is fast and easy to use.
2. Versatile - SPR2xxx materials can be used with a wide range of cleaning methods, from benchtop soak applications, through to 'dishwasher' type systems and large automatic in-line equipment.
3. Safe to use - Non-volatile, non-flammable, odour free and low toxicity for maximum operator comfort and safety.
4. Ultra low surface tension allows SPR2xxx to penetrate under connectors and all component types, including QFP's and BGA's.
5. Safe for the environment - zero VOC's, ozone friendly and completely bio-degradable. Diluted SPR2xxx and rinse water can usually be disposed of as trade effluent (subject to licence from the water authority in your area).
6. Tolerant operating conditions - SPR2xxx can be used at ambient temperatures through to approx. 36°C. SPR2xxx has a long shelf life and requires no special storage conditions providing it is stored in the original containers and kept out of direct sunlight.

The SPR2xxx range is available as a concentrate or pre-diluted in high purity de-ionised water, depending on the cleaning method. Some application suggestions are shown in the table overleaf.



CLEANING METHODS	SPR2050 Standard	SPR2050CL Concentrated	PROCESS APPLICATION NOTES
Hand cleaning with brush assistance.		✓	Brush on SPR2050CL. Leave for several minutes, brushing occasionally to break up residue. Rinse, finishing with D.I. water and dry.
Benchtop single tank with ultrasonics. Multi-tank batch type system with or without spray under immersion or ultrasonic agitation.	✓ ✓		Soak for several minutes. 30-45 seconds of spray or ultrasonics can reduce cleaning time. Use tank heating if fitted up to 36°C. Rinse in town water followed by D.I. water rinse. Then dry for 15-25 minutes at 65°C in warm vented air.
Dishwasher type system. Large format automatic inline system.	✓ ✓ Depending on type of system	✓	Follow machine manufacturer's instructions to evolve optimum cleaning cycle. In systems which recirculate the cleaner, SPR2050 should be replaced when it becomes heavily contaminated. This is indicated by a cloudy brown colour. Testing, indicating a change toward acid PH will also indicate that the solution is near saturation condition with flux residue.

SPR2000 RESIDUE REMOVAL GUIDE

FLUX RESIDUE TYPE	SPR2050	SPR2100	SPR2300
Water Soluble	Very Good	Good	Acceptable
Rosin	Very Good	Very Good	Very Good
Rosin/Resin Modified	Very Good	Very Good	Good
Standard to hard non-clean types	Not recommended	Good	Very Good
Very hard to clean synthetic anepoxies	Not recommended	Not recommended	Good

SPR2050 COMPATIBILITY WITH CLEANING EQUIPMENT CONSTRUCTION MATERIALS

Surclean SPR2050 has been extensively tested both in-house and with customers to establish compatibility with the following commonly used materials.

MAIN STRUCTURES

Exteriors and interior casework, tank, lids, etc.
Pipework and filter systems.

Spray nozzles

Gaskets

Antispray curtains (in-line)

PUMPS

Primary construction material
Gaskets
Seals

Air knives and drying nozzles

MATERIAL

Stainless Steel (304, 316)
Polypropylene
Stainless steel (304, 316)
CPVC
Polypropylene, Nylon 66, PTFE,
Stainless steel (304, 316)
Vitron, Ethylen Propylene, Neopren,
Teflon, Buna-N
Silicon Rubber

Stainless Steel (304, 316)
Vitron, Ethylen Propylene,
Alumina ceramic, NI-Resist, Tungsten, Carbide,
Silicon Carbide
(Dry zone) Anodized aluminium
(Wet zone) Stainless Steel (304, 316)

SURCLEAN TECHNICAL SUPPORT SERVICES

Surclean maintains a modern well equipped electrochemical laboratory as part of our customer application support programme. We can conduct initial tests to assist in product selection and subsequently test post processing results for any of our materials. Facilities include SIR and Electromigration testing together with environmental conditioning to MIL QQ-571E, DIN and IPC specifications. As a manufacturer rather than a distributor or re-packing company, we can sometimes modify a standard product to optimise the performance for a specific application.