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MS2™ MOLTEN SOLDER SURFACTANT

Eliminates Solder Dross

- Reduces solder usage up to 70% depending on production volume
- Environmentally friendly
- Available for lead-free and leaded processes

Unlike conventional powders, oils, mechanical separators and even nitrogen blankets, MS2™ molten solder surfactant (U.S. and foreign patents pending) doesn't just reduce or inhibit solder dross in wave soldering—it actually eliminates it.

By eliminating dross, MS2™ molten solder surfactant allows manufacturers to reduce their solder usage by as much as 70%, depending on production volume, resulting in significant cost savings.

Enhances Performance

- Produce printed circuit board assemblies with fewer defects
- Better quality joints
- Less rework

Analyses conducted under high-volume conditions by large electronics manufacturers have demonstrated that MS2 enables these manufacturers to produce printed circuit board assemblies with fewer defects and better quality joints, while eliminating dross and reducing the costs of solder, hazard materials handling and labor.

Board defects in general are reduced, resulting in less rework and touch-up. Cross sectional analyses of connector, capacitor and other component leads have demonstrated excellent fillets, smooth soldered surfaces and complete penetration of the solder while using MS2.

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Dross is formed when molten solder comes into contact with oxygen. Dross consists of metal oxides plus otherwise good solder metal that is bound up with the oxides and is thus unavailable for soldering.

This bound-up metal makes up as much as 70% of the total amount of dross, which in a typical wave solder machine can amount to as much as 3 lbs. or more per hour.



Lead-free solder bath without MS2™ molten solder surfactant, showing typical dross buildup



Lead-free solder bath with MS2™ molten solder surfactant, showing no dross—only shiny solder

MS2™ molten solder surfactant, which is available for both lead-free and leaded processes, is a nonvolatile liquid that is poured onto the surface of the solder bath.

Approximately 200–300 ml is the average amount for an initial charge; a smaller amount of fresh product is usually added once or twice per shift.

MS2™ molten solder surfactant does not mix with the metal but forms a thin floating layer that covers areas of the solder surface excluding the wave, which it does not disturb. There are no fumes or odor and no residue is deposited on boards or components.

When MS2™ molten solder surfactant is added to the solder bath, it prevents dross from forming on the surface, and any dross generated by the exposed solder wave is immediately converted back into usable metal, so no dross accumulates.

Furthermore, MS2™ molten solder surfactant keeps on removing metal oxides as solder is pumped through the system, cleansing and purifying the bath. The result is lower surface tension; enhanced wetting and fewer solder-related defects have also been observed.

As the layer of MS2™ molten solder surfactant continues to convert dross back to metal, it will become thicker and more viscous, and can be easily removed with a supplied skimmer. The small volume of spent material can then be inexpensively shipped back to P. Kay Metal for recycling.



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Manufacturer of Premium Solders & Soldering Chemicals