



SUPERIOR OSP-2D



FLUX/COATING

- When sprayed on PCBs post-fabrication, acts as an oxide protective barrier.
- Flux formulated for Sn/Pb and Lead-Free solder applications.
- OSP-2D can be classified as an RMA Flux with a Rosin/Resin activator.
- Meets all the requirements of Bellcore TR-NWT-000078, Issue 3, December, 1991
- Meets all the requirements of IPC, ANSI, J-STD-004, Type REL0
- Meets all the requirements of JIS-Z-3197

DESCRIPTION

Superior OSP-2D is a dual-purpose coating/flux formulated to protect PTH and SMT PCBs from oxidation at the time of fabrication and as a spray-on flux for PTH/Wave Soldering applications.

The flux, sprayed onto PCBs post fabrication, can be cured at temperatures up to 40°C to leave a white coating on the PCB surface that provides oxide protection for bare copper and other PCB surfaces. PCBs can then be populated for single-pass protection in PTH or SMT applications. The coating acts to provide extra fluxing action during the soldering processes and yields a clear residue that does not need to be removed. The sprayed on OSP-2D is good for a single pass in PTH and SMT applications.

Superior OSP-2D is also a No-Clean flux formulated for wave soldering applications.

Superior OSP-2D meets all the requirements of Bellcore TR-NWT-000078, Issue 3, December, 1991; and all the requirements of IPC, ANSI, J-STD-004-Type REL0.

PROCESS/APPLICATION

Superior OSP-2D flux is formulated for all applications as supplied, and may be applied to parts in waterfall, dipping, or spraying processes. With extended use, the flux solids level increases causing the acid number to increase. Flux activity levels should be monitored and maintained using a titration kit. Add **Superior No. 95T** thinner to maintain proper acid number.

PCB COATING

- ❶ Make certain PCB surfaces are free of any oil, grease, or other impurities.
- ❷ Spray flux evenly onto PCBs surface.
- ❸ Allow flux to cure.
 - If curing at room temperature, establish a profile/process that allows for all flux to cure evenly across the surfaces.
 - If curing in a heated environment, do not exceed 40C in process. Since all PCBs behave differently, establish a profile that yields a cured PCB in minimum time-frame. Overheating can cause the coating to be weakened and allow oxidation to occur.

WAVE SOLDERING

Superior OSP-2D should be sprayed onto PCBs. The optimum topside PCB preheat temperature recommendation is 93-115°C/200-240°F. Solder-bath temperature of 250°C ± 10°C is recommended for optimum result.

For optimum soldering results, use the following guidelines:

- Conveyor speed and preheat settings should be adjusted to ensure complete solvent removal from the PCBs before contact is made with the solder wave.
- In most machines, a conveyor speed of 4-6 ft./min is acceptable, where the preheat section is a 4 ft. minimum. However, conveyor settings must be established by operators to meet the process needs of PCBs requiring special attention.

Superior manufactures quality fluxes. Our business is solving problems.



The following procedures are recommended for optimum performance.

- ❶ Make certain that the PCB surfaces are free of any oil, grease, or other impurities.
- ❷ Replace the flux daily unless it is in a sealed, self-contained system.
- ❸ Regularly clean the fluxing equipment.

PHYSICAL PROPERTIES

| | |
|---|-------------------------------------|
| Form | Light, Amber Liquid |
| Specific Gravity | 0.81 ± 0.05 @ 20-25°C/68-77°F |
| Density | 6.755 lbs./gallon @ 20-25°C/68-77°F |
| Flash Point | 12°C/53°F T.C.C. |
| Halide Content | None |
| Acid Number | 36 ± 4 |
| Recommended Soldering Temperature Range | 200-270°C/390-520°F* |
| This Product is RoHS Compliant | |

*Higher temperatures can be used to meet selective soldering and board process requirements.

SAFETY PRECAUTIONS

Superior OSP-2D is a flammable product and should be handled with care and the normal precautions taken when working with chemical products.

When soldering with **Superior OSP-2D**, adequate exhaust ventilation should be provided. Avoid contact with eyes, skin, and mucous membranes. Always wear NIOSH approved safety equipment when working with chemicals. Store in plastic containers away from heat.

Store flux in an area with controlled temperature between 18°C/64°F – 25°C/77°F. Exposure to light will discolor flux and turn it dark.

Refer to Material Safety Data Sheet (MSDS) for additional safety information.

JIS-Z-3197 SPECIFICATIONS

| Item | | OSP-2D | Test Method |
|------------------------------------|---------------|----------------------|---------------------------------------|
| Color tone | | Light yellow clear | Visual observation |
| S.G (15) | | 0.811 | JIS-Z-3197 _{.1999} 8.2.2 |
| Solid Content wt% | | 6.7 | 145 15 |
| Halide Content wt% | | 0 | JIS-Z-3197 _{.1999} 8.1.4.2.1 |
| Spread Factor % | | 77.9 | Metal SN100C |
| Surface Insulation Resistance Test | Initial Value | 1.6×10 ¹² | JIS-Z-3197 40°C, 95% |
| | After 96hr | 4.0×10 ¹² | |
| Electromigration Test | Initial Value | 1.3×10 ¹² | JIS-Z-3197 40°C 95% DC100V |
| | After 96hr | 1.4×10 ¹² | |
| Acid Value mg KOH/g | | 37.1 | JIS-Z-3197 _{.1999} 8.1.4.1.1 |
| Resistivity of water extract Ωm | | 75 | |

The information contained herein is based on data considered to be accurate and is intended for use by persons having technical skills at their own discretion and risk. Since conditions of use are outside of Superior Flux & Mfg. Co.'s control, we cannot assume liability for results obtained or damage incurred due to misuse, nor can we assume customer liability.

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