

Ball Drop, Bumping, Laser Paste Flux DS-0303

Introduction

DS-0303 Paste Flux is a water-soluble type flux specifically designed for strong solder ability in a wide variety of applications where post reflow water cleaning is used. The Flux residues are removed by warm water after soldering and provides clean shine surface after cleaning. It is a 3rd generation product that extends the tack and stencil life properties of water-soluble solder cream even beyond those previously achieved with traditional rosin-bearing formulations.

Features

1. High quality performance in Tixography, Printerability, Tackiness, Shelf Life and Reliability
2. One Dotting, Printing
3. VOC-free, Halide-Zero,
4. Laser Soldering

Package

Paste Flux packing is generally each 150, 500gr and 10Kg thermally controlled boxes wrapping.

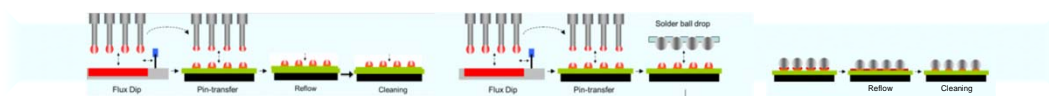
Storage

If especially order, we could a separate wrap and should be stored in refrigerator around 20~ 25°C upon receipt. Paste Flux must be assimilated to room temperature before unsealing its package prior to use(at Room Temperature). Too long storage at room temperature is attainable to material damage.

Safety

While the flux system is not considered toxic, its use in typical reflow will generate a small amount of reaction and decomposition vapors. These vapors should be adequately exhausted from the work area. Consult the MSDS for additional safety information.

Process



DS-0303 Properties

DS-0303 Properties


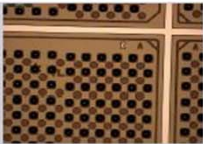
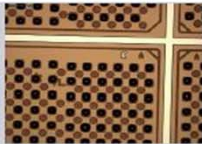


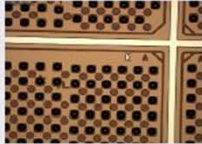
Items	Data	Remarks
Appearance	Paste for Dark Yellow	
Water Extract	>130,000 ohm	IPC J-STD-006
Corrosiveness	Passes Copper Mirror	
Halogen (ppm)	Zero	IPC J-STD-004
pH,	6.8 Typical	
Viscosity (Pa.s)(at 25 Deg. C)	15~45 Pa.s	at 5PRM (Malcom Viscosity)
Wettability (%)	Lead: 90% / Lead Free 80%	
Cleaning Temp	40~50 °C	
Self Life	6 Months	20 ~ 25 °C
Dry Time	8 Hours	23 °C, 50%RH

Wafer test

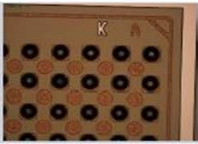
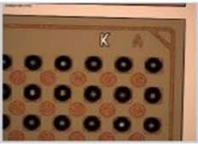
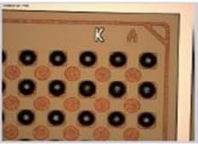
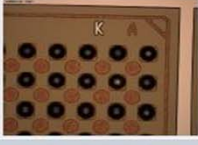

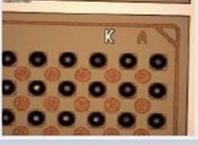
Test Vehicle

- ▶ Wafer : pattern1) 12" A Dummy Patterns
pattern2) 12" B Dummy Patterns
- ▶ Ball attach : ATH
- ▶ Solder ball : SAC405 / 250um
- ▶ Test items : Residue by reaction, Delamination, Soldering, Void

- ▶ TGA improved
- ▶ Good

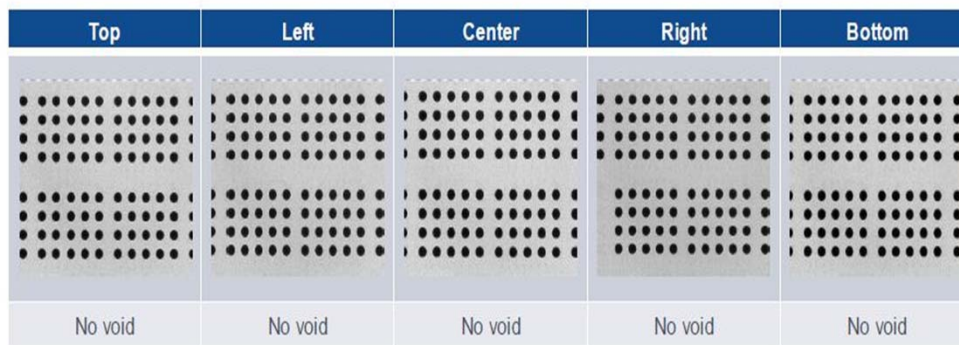
	1x Reflow	2x Reflow	3x Reflow
Center			
Edge			
Results	No reaction	No reaction	No reaction

- ▶ Not found any abnormality related to Bump surface, Residue

	1x Reflow	2x Reflow	3x Reflow
Center			
Edge			
Results	No reaction	No reaction	No reaction

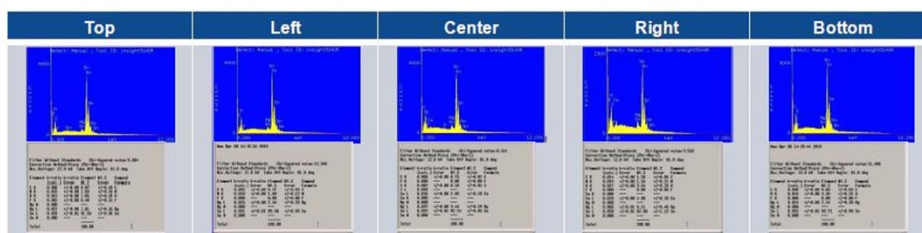
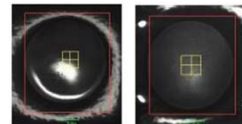
Wafer test

► Void not found

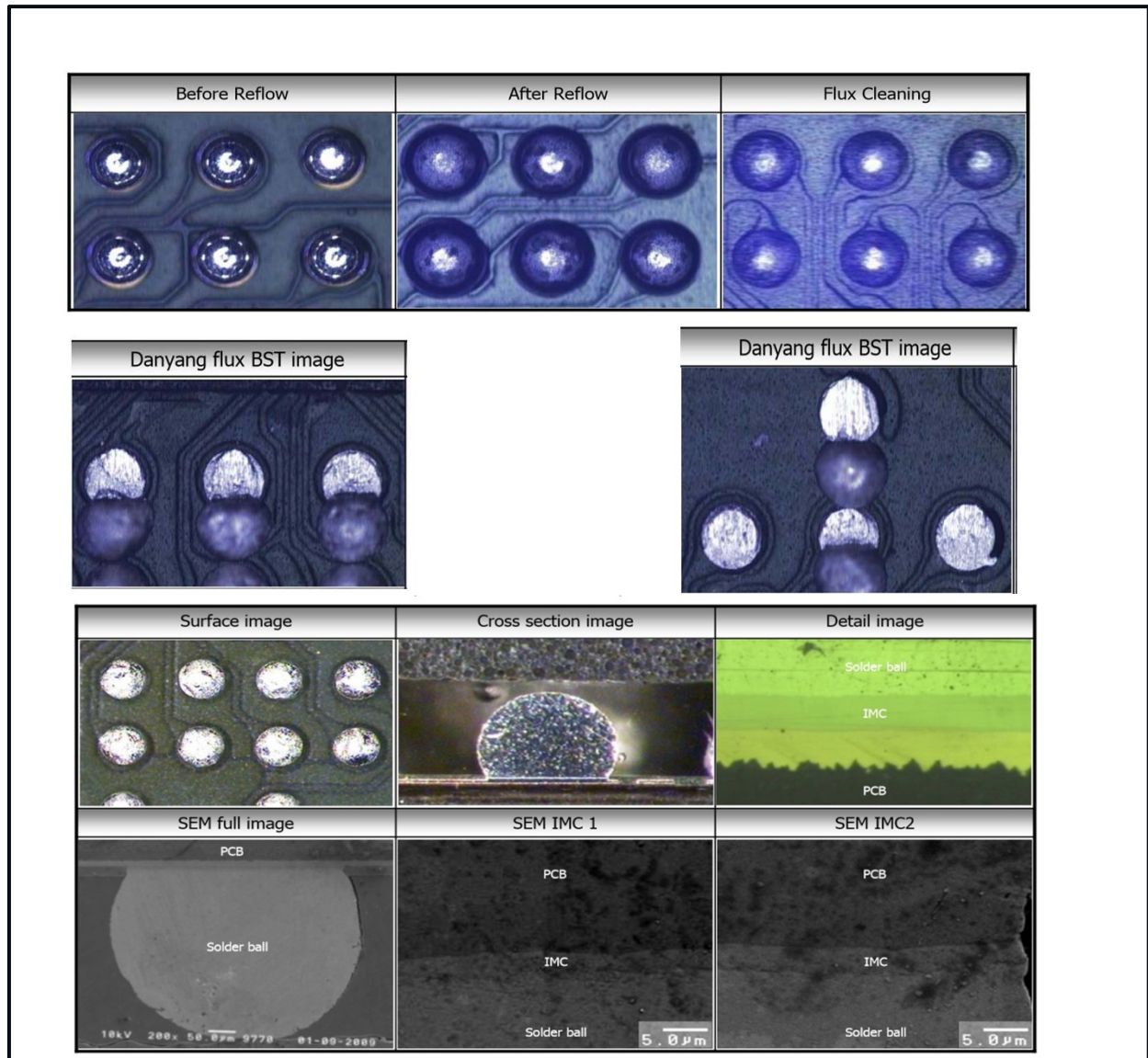


EDX

- Ball & Passivation surface
 - ▷ Shown no any abnormality on EDX analysis

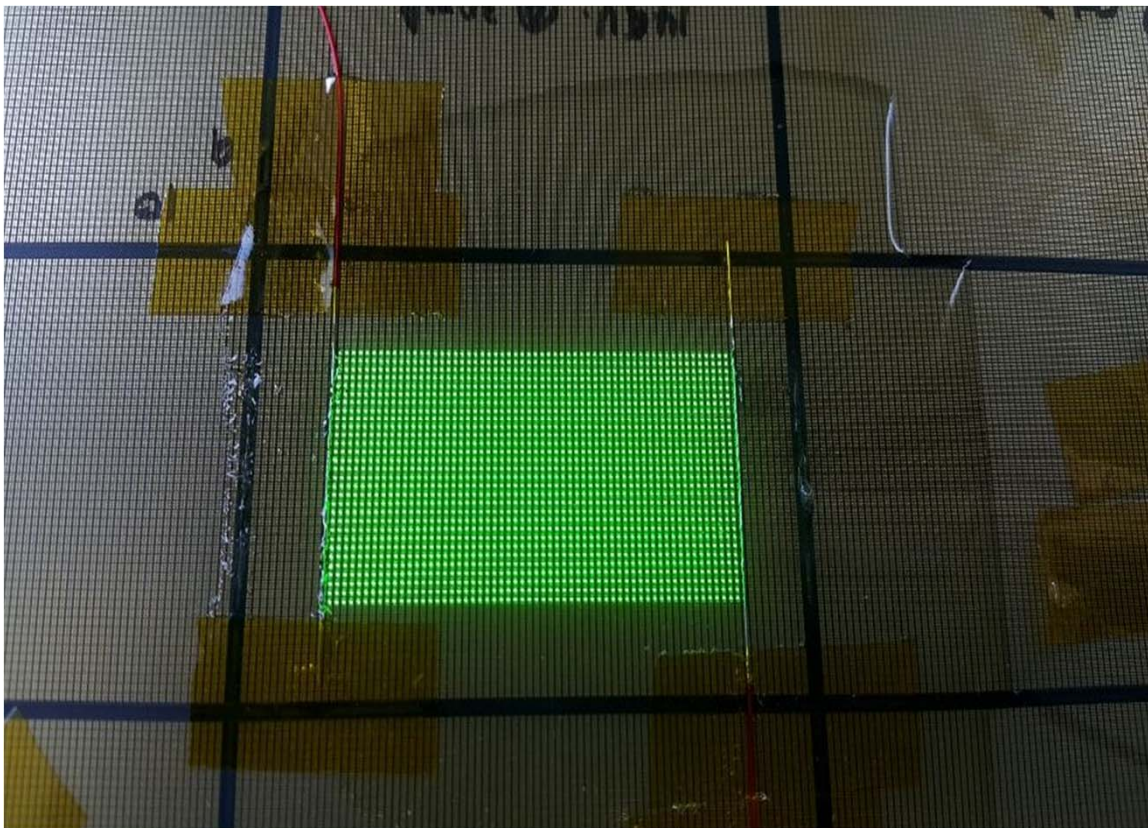


Ball Drop test



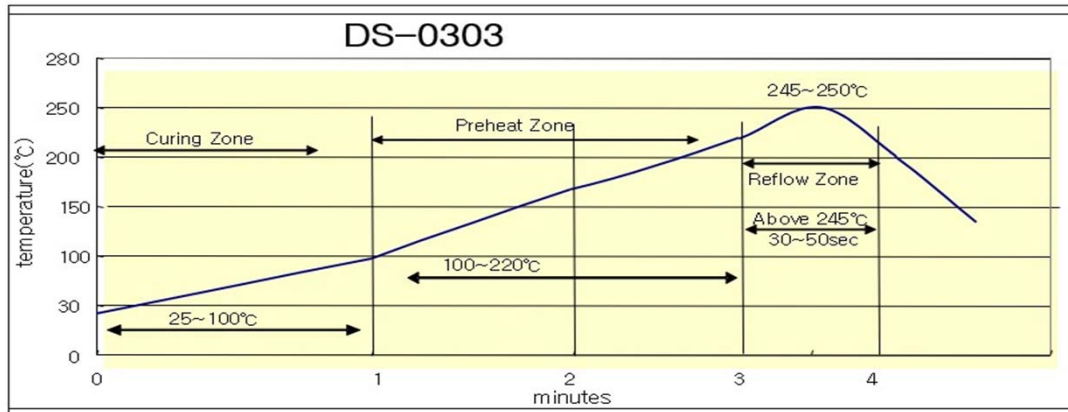
Micro LED (80 μ m) – Laser Solering

Flux Spray after Reflow Soldering



Reflow Profile

Reflow



Guide line for soldering

- Stencil : Laser Cut Application
- Squeegee : Recommend Metal
- Conveyer Speed : 25mm ~ 200mm/sec
- Temp. Profile : Ramp @ 60 ~ 120 / min to 145 ~ 190°C
Dwell @ 145 ~ 190 for 0.5 ~ 1.0 minutes
Ramp @ 1 ~ 2°C/Sec to 240 ~ 250°C Peak Temp
Ramp Down @ 1.5 ~ 2.0 / Sec
- For Peak Temp. Time : 3Min. 30Sec.

Laser

