Product Data Sheet

Wafer Flux WS-3518

Features

- Water-soluble
- Viscosity suitable for 150–300mm wafers
- No residue
- Halide-free
- Promotes uniform solder bump formation
- Suitable for SnPb and Pb-free solder applications

Introduction

Wafer Flux WS-3518 is a low viscosity semiconductor-grade flux, specifically optimized for uniform, oxide-free solder bump formation across wafers up to 300mm (12 inches) in diameter, without solder thieving. **WS-3518** washes off easily and leaves zero residues, even after repeated application/reflow/cleaning cycles.

Properties

Property	Value	Test Method
Flux Type Classification:	M0	J-STD-004 (IPC-TM-650: 2.3.32 and 2.3.33)
Typical Viscosity:	96cst	Cannon-Fenske viscometer
SIR (ohms, post cleaning):	Pass (>10^9 after 7 days @85°C and 85% RH)	J-STD-004 (IPC-TM-650: 2.6.33 IPC-B-24)
Typical Acid Value:	61mg KOH/g	Titration
Specific Gravity:	0.987g/cc	J-STD-004B
Color:	Deep Amber to Yellow	Visual
Shelf Life:	6 months	0°C to +25°C

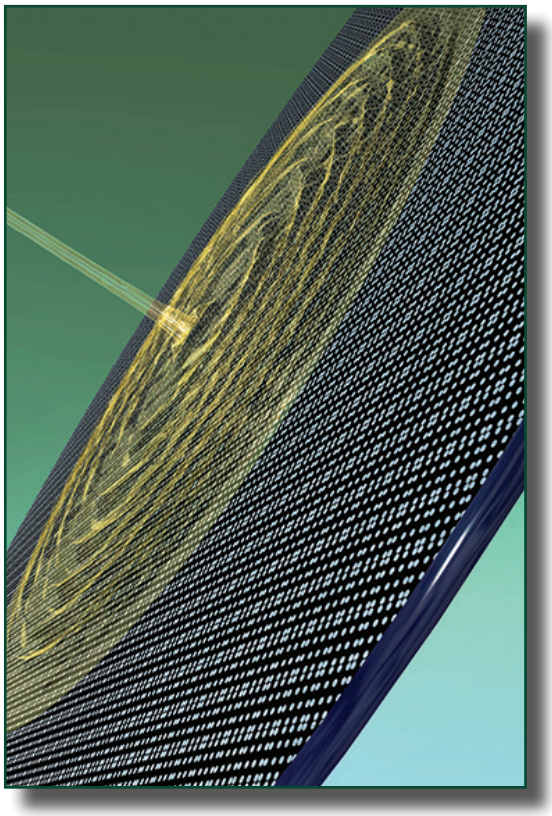
All information is for reference only. Not to be used as incoming product specifications.

Application

WS-3518 can be applied by standard spray and spin-coating techniques.

For spin-coating applications, an initial rotation speed should be used to spread this liquid flux uniformly onto the wafer. Next, a velocity rotation ranging from 15 rpm to 800 rpm based on the application should be used. The wafer size, topology, pitch, and the flux application are all variations that would impact the rotation velocity. This velocity rotation should be used to thin the flux and remove the excess flux from the wafer surface.

For spray applications, the equipment flux storage tank should hold enough flux for one 8-hour shift. Additional flux remaining in the tank may expire (pot life >8 hours at room temperature) if left for a prolonged amount of time. Spray equipment should also be cleaned frequently to ensure the highest level of purity with this or any other flux.



Cleaning

WS-3518 is designed to be readily cleanable with DI water, or water with an added cleaner. Ideal conditions for spray cleaning are 25°C or higher for >1 minute at >60psi.

Packaging

Wafer Flux WS-3518 is available in containers from 100g to 3.2kg (1 gallon). Other packaging can be provided to meet specific requirements.

Storage

WS-3518 containers should be stored at 0°C to 25°C for maximum shelf life. Storage temperatures should not exceed 25°C for more than 4 days, and should never exceed 30°C. After removing from cold storage, **WS-3518** should be allowed to stand for at least 4 hours at room temperature before using.

OVER→

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Technical Support

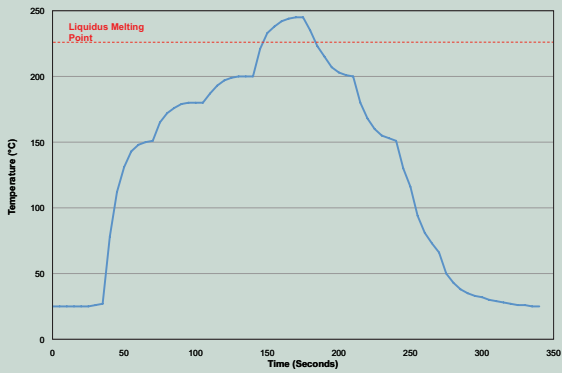
Indium Corporation sets the industry standard in providing rapid response, on-site technical support for our customers worldwide. Indium Corporation's team of Technical Support Engineers can provide expertise in all aspects of materials science and semiconductor packaging process applications.

Material Safety Data Sheets

The MSDS for this product can be found online at:
http://www.indium.com/techlibrary/msds.php

Reflow

Recommended Profile:



The above profile is recommended as a starting point for 300mm wafers with SnAg solder microbumps, and should be optimized by the user to meet their individual process needs. Wafers should be reflowed in a nitrogen atmosphere (<10ppm O_2 is recommended, but <20ppm O_2 may be feasible; however, results may not be optimal). Note that bridging or solder thieving may be seen for fine pitch microbumps (<60microns) on copper pillars, and that reducing the peak temperature will reduce the occurrence of this failure mode.

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

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