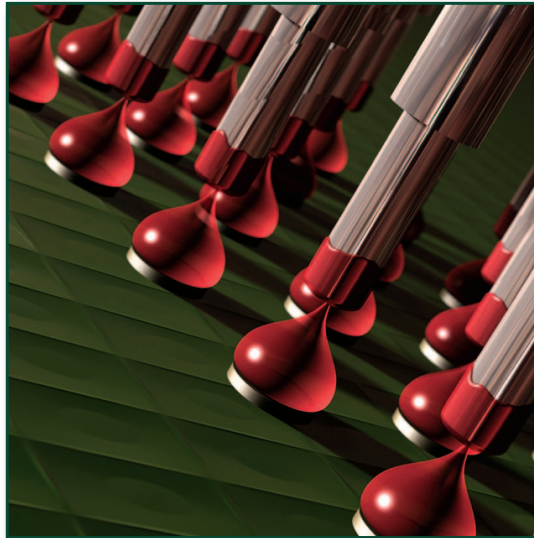


Product Data Sheet

# Ball-Attach Flux WS-676

**Features:**

- Halogen-free – no intentionally added (NIA) halogens
- Flux rheology applicable for all sphere sizes
- Suitable for Pb-free or SnPb applications
- Uniform pin transfer over extended periods
- Proven high yields in ball-attach process
- Excellent solderability on a wide range of surfaces
- Cleanable with warm DI water only
- Red color for ease of detection



**Introduction**

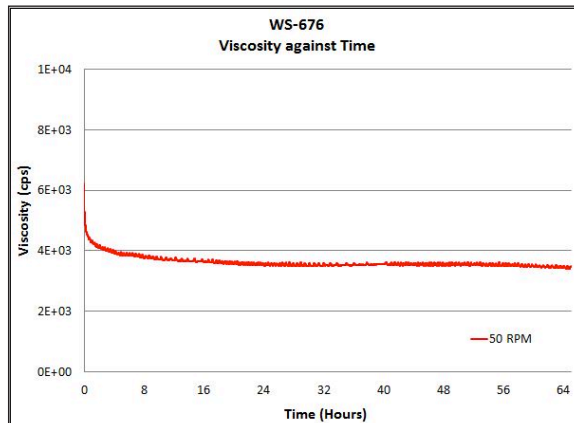
**Ball-Attach Flux WS-676** is a NIA halogen-free water-soluble ball-attach flux designed for use in pin-transfer applications for ball attachment to substrates (BGA manufacturing). Its rheology is specifically designed for use with even the smallest gravity-fed spheres. **WS-676** has an activator system powerful enough to promote wetting on the most demanding substrate metallizations. The flux has a distinctive red color, which aids automated level-sensing equipment and also enhances visual inspection. **WS-676** is cleanable with just warm DI water only.

**Properties**

Property	Value	Test Method
Flux Type Classification:	H0	J-STD-004 (IPC-TM-650:2.3.32 and 2.3.33)
Typical Viscosity:	20kcps (peak) 18kcps (5mins)	Brookfield HB DVII +-CP (5rpm)
SIR (ohms, after cleaning):	Pass (>109 after 7days @85°C & 85% RH)	J-STD-004 (IPC-TM-650: 2.6.33 IPC-B-24)
Typical Acid Number:	34mg KOH/g	Titration
Typical Tack Strength:	338g	J-STD-005 (IPC-TM-650:2.4.44)
Shelf Life:	Data not yet available	Viscosity change/ microscope examination

**Application**

The amount of **WS-676** flux deposited on the substrate can be optimized by changing equipment parameters. Key variables include pin shape, pin diameter, shear speed, dwell, and depth of immersion. The flux rheology can be optimized for desired application by shearing to achieve the desired viscosity.



**Cleaning**

**WS-676** residue can be cleaned with DI water or water with an added cleaner. Ideal conditions for spray-cleaning: 25 °C (room temperature) or higher for >1 minute at >60psi.

OVER →

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<a href="http://www.indium.com">www.indium.com</a>	<a href="mailto:askus@indium.com">askus@indium.com</a>	
ASIA:	Singapore, Cheongju: +65 6268 8678	
CHINA:	Suzhou, Shenzhen, Liuzhou: +86 (0)512 628 34900	
EUROPE:	Milton Keynes, Torino: +44 (0) 1908 580400	
USA:	Utica, Clinton, Chicago: +1 315 853 4900	

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## Ball-Attach Flux WS-676

### Packaging

Ball Attach Flux WS-676 is available in jars and in 6 oz. and 12 oz. cartridges.

### Storage

For maximum shelf life, **WS-676** cartridges should be stored tip down at -20 °C to +5 °C. Storage temperatures should not exceed 25 °C for more than 4 days, and should never exceed 30 °C. After removing from cold storage, **WS-676** should be allowed to stand for at least 4 hours at room temperature before using.

### Technical Support

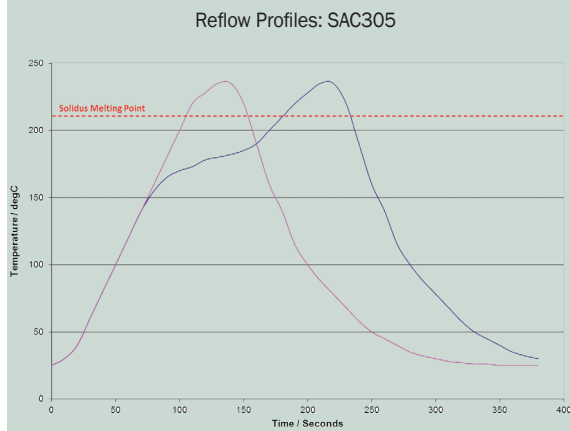
Indium Corporation sets the industry standard in providing rapid response, on-site technical support for our customers worldwide. Indium Corporation's team of Technical Support Engineers can provide expertise in all aspects of materials science and semiconductor packaging process applications.

### Material Safety Data Sheets

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

### Reflow

#### Recommended Profile:



A short preheat (150°-160 °C) for less than 45 seconds may be used to reduce voiding. The profile should ideally be a linear ramp at 1-2 °C/second up to 20-30 °C above solidus temperature, with a rapid cool down afterwards, and a minimum time above liquidus of 20 seconds.

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.

[www.indium.com](http://www.indium.com)

[askus@indium.com](mailto:askus@indium.com)

ASIA: Singapore, Cheongju: +65 6268 8678  
 CHINA: Suzhou, Shenzhen, Liuzhou: +86 (0)512 628 34900  
 EUROPE: Milton Keynes, Torino: +44 (0) 1908 580400  
 USA: Utica, Clinton, Chicago: +1 315 853 4900



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