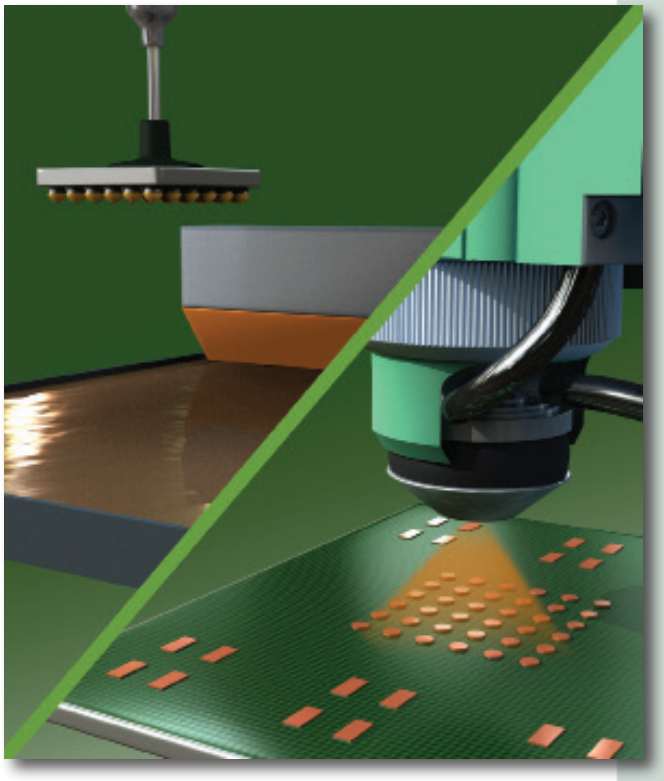
PRODUCT DATA SHEET

Flip-Chip Fluxes

Features

- Superior wetting ability
- Wide reflow temperature ranges
- Extremely low to no residue for no-clean applications



Introduction

Our fluxes for flip-chip bonding applications are halide-free. They are designed for both air and nitrogen reflow and may be purchased individually or in a research kit. The no-clean and water-soluble fluxes are available in two series: LT and HT.

Series LT is for high-performance eutectic soldering, such as SnPb and Pb-free.

Series HT is designed for high Pb-containing solder alloys with a high melting point.

Each series consists of fluxes with different viscosities and specifications depending on the processing conditions. For example, a flux with low or medium viscosity can be sprayed onto substrates followed by flip-chip placement. These fluxes can also be dispensed onto the side of the flip-chip, allowing the flux to wick across the bottom of the chip. Fluxes with higher viscosities can be printed onto the pads, or the chip can be dipped into the flux prior to placement.

These fluxes are designed to cover a variety flip-chip bonding processes. Indium Corporation will also provide custom fluxes to meet specific requirements.

The table below offers users a guideline for selecting the appropriate flux for the desired application. These fluxes are represented by a four part code.

Type of Process	Flux Viscosity	Flux for Low MP Alloys*	Flux for High MP Alloys*
Spray, dispense	Low	FC-NC-LT-A FC-WS-LT-A	FC-NC-HT-A or A1 FC-WS-HT-A or A1
Spray, dispense	Medium	FC-NC-LT-B FC-WS-LT-B	FC-NC-HT-B FC-WS-HT-B1
Brushing, dipping	Medium High	FC-NC-LT-C FC-WS-LT-C	FC-NC-HT-C or CA
Dipping, printing	High	FC-NC-LT-D FC-WS-LT-D	FC-NC-HT-D FC-WS-HT-D

* 1. FC–flip-chip application
2. NC–no-clean WS–water-soluble
3. LT–low temperature HT–high temperature
4. Viscosity level: A–low B–medium C–medium high D–high

Safety Data Sheets

The SDS for these products can be found online at http://www.indium.com/sds

OVER →

Form No. 97660 R7

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INDIUM CORPORATION®

ISO 9001 REGISTERED

Flip-Chip Fluxes

Low Temperature Reflow No-Clean Fluxes (Series LT)

Properties	FC-NC-LT-A	FC-NC-LT-B	FC-NC-LT-C	FC-NC-LT-D
Typical Viscosity	5 cSt	42 cSt	N/A	N/A
Typical Acid Number	82.5	25	20.5	31.7
Typical Specific Gravity	0.83	0.91	0.94	N/A
Flash Point	23°C	24°C	110°C	100°C
Reflow Atmosphere	N2	N2	N2	N2
Max. Reflow Temperature	400°C	400°C	400°C	400°C
SIR	Pass	Pass	Pass	Pass
Indium Part Number	84174	84175	84176	84177

High Temperature Reflow No-Clean Fluxes (Series HT)

Properties	FC-NC-HT-A	FC-NC-HT-A1*	FC-NC-HT-B	FC-NC-HT-C	FC-NC-HT-CA	FC-NC-HT-D
Typical Viscosity	6.1 cSt	60 cSt	46 cSt	N/A	N/A	67.5 kcps
Typical Acid Number	83	32.2	18.6	18.6	28.1	31.7
Typical Specific Gravity	0.83	0.938	0.91	0.95	0.95	N/A
Flash Point	23°C	37°C	26°C	110°C	37°C	110°C
Reflow Atmosphere	N2	N2	N2	N2	N2	N2
Max. Reflow Temperature	450°C	450°C	450°C	450°C	450°C	450°C
SIR	Pass	Pass	Pass	Pass	Pass	Pass
Indium Part Number	84178	84279	84179	84180	84200	84181

Low Temperature Reflow Water-Soluble Fluxes (Series LT)

Properties	FC-WS-LT-A	FC-WS-LT-B	FC-WS-LT-C	FC-WS-LT-D
Typical Viscosity	11 cSt	54 cSt	1450 cSt	N/A
Typical Acid Number	42	70	100	73
Typical Specific Gravity	0.905	0.979	1.06	N/A
Flash Point	11°C	40°C	100°C	140°C
Reflow Atmosphere	Air or N2	Air or N2	Air or N2	Air or N2
Max. Reflow Temperature	250°C	250°C	250°C	250°C
SIR	Pass	Pass	Pass	Pass
Indium Part Number	84201	84195	84202	84182
Cleaning	D.I. Water	D.I. Water	D.I. Water	D.I. Water

High Temperature Reflow Water-Soluble Fluxes (Series HT)

Properties	FC-WS-HT-A*	FC-WS-HT-A1	FC-WS-HT-B1	FC-WS-HT-D
Typical Viscosity	19.3 cSt	5 cSt	111.5 cSt	22,400 cps
Typical Acid Number	37.3	11	50.4	31
Typical Specific Gravity	0.94	0.8	1.05	1.19
Flash Point	12°C	11°C	24°C	>225°C
Reflow Atmosphere	N2	N2	Air or N2	Air or N2
Max. Reflow Temperature	345°C	345°C	345°C	345°C
SIR	Pass	Pass	Pass	Pass
Indium Part Number	84189	84286	84232	84183
Cleaning	D.I. Water 40psi @ 55°C	D.I. Water 40psi @ 55°C	D.I. Water 40psi @ 55°C	D.I. Water 40psi @ 55°C

NOTE:

The viscosities were measured with a Brookfield RVT-DV1 viscometer using a TC or TF spindle (D viscosity), #1 disc spindle (C viscosisty), or Cannon-Fenske viscometer (A and B viscosity) @ 25.0 +/-1°C

Shelf life is 6 months when stored at 0-30°C unless otherwise noted.

** FC-NC-HT-A1 and FC-WS-HT-A have a shelf life of 3 months at 18-30°C*

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