

# Halogen-free Solder Paste (NH-Series)

Of all solders, halogen-free solder is the most considerate to people and the environment. Materials containing halogen are added to solder fluxes to increase workability but have recently gained attention because they release dioxins when burned. With this new lineup, Almit has introduced halogen-free products that manage to maintain the same workability of halogen based solder, while helping the environment.

## Halogen-free Specifications

Element	General Required Specifications	
Chlorine (Cl)	900ppm or below	Total 1500ppm or below
Bromine (Br)	900ppm or below	
Fluorine (F)	Unintended	
Iodine (I)	Unintended	

## LFM-48 NH Series

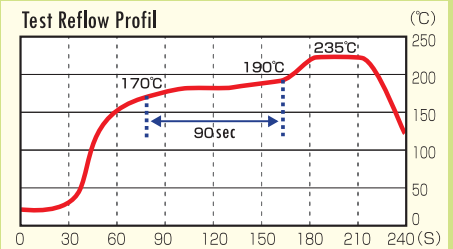
Greatly improves wettability, an area that has become a problem with halogen-free products, and ensures that wettability will be equal or superior to older halogen based products. This product also improves de-wetting issues with small powder sizes due to oxidation during preheat, thereby allowing for a much more stable soldering process.



### Reflow and Wetting Test (Test Materials)

Product Name	LFM-48W/U NH(D)	Former Halogen-free Product	Former Best Halogen-type Product
Flux Name	NH(D)	—	—
Alloy Name	LFM-48	←	←
Alloy Composition	Sn-3,0Ag-0,5Cu	←	←
Powder Name	W/U	←	←
Powder Size (µm)	20-38/10-28	←	←
Chlorine (Cl)	*N.D.	*N.D.	*N.D.
Bromine (Br)	*N.D.	*N.D.	900ppm or below

\*N.D. = Detection Limit (50ppm) or lower



### Reflow and Wetting Test Result

	Common Powder 20-38µm	Fine Powder 10-28µm
NH(D)	○ No Problems	○ No Problems
Former halogen-free Product	○ No Problems	✗ Non-melting of powder develops around fillets
Former halogen-type Product	○ No Problems	○ No Problems

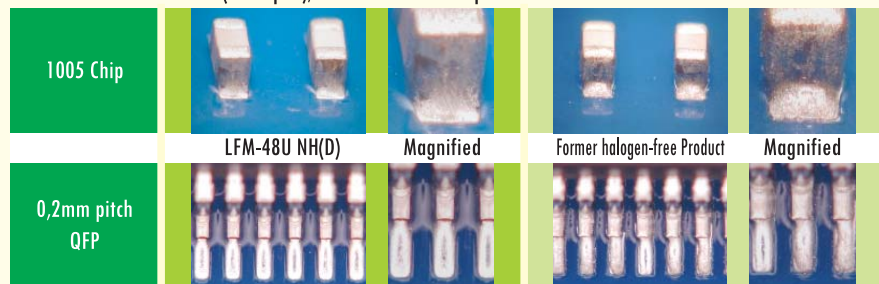
### Normal Powder Size Results

Powder Size: W-Powder (20-38µm), Mask Thickness 120µm

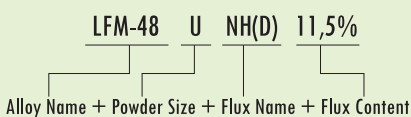


### Fine Powder Size Results

Powder Size: U-Powder (10-28µm), Mask Thickness 100µm



### Product name component for solder paste



### Product Specifications

Flux Name	Alloy Name	Alloy Composition	Powder Size	Flux Content	Viscosity
NH(D)	LFM-48	Sn-3,0Ag-0,5Cu	X:25-45µm	11,5%	200Pa·s
			W:20-38µm		
			U:10-28µm		
NH	LFM-48	Sn-3,0Ag-0,5Cu	X:25-45µm	12,0%	190Pa·s
			W:20-38µm		
NH(A)	LFM-48	Sn-3,0Ag-0,5Cu	X:25-45µm	11,0%	200Pa·s
			W:20-38µm		

\* LFM-48 has been sublicensed for JP Pat.No. 3027441 and US Pat.No.5527628