

ALPHA[®] OM-353 Paste Flux

No-Clean, Zero-Halogen, Lead-Free Capable Paste Flux

DESCRIPTION

ALPHA OM-353 Paste Flux is a No-Clean flux engineered to be used in the placement and reflow of lead-free solders for BGA attach processes. Before reflow, the flux provides sufficient tack to hold the BGA in place. After reflow the residue is clear & colorless. This paste flux can also be used in the rework of components.

ALPHA OM-353 Paste Flux is also available in black as ALPHA OM-353B. The presence of the black dye aids with detection by vision systems in PoP applications.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- **Wide Reflow Profile Window:** enables quality soldering of complex, high density PWB assemblies in an N2 environment, using high ramp rates and soak profiles as high as 170 °C to 180 °C
- **Excellent Flux Residue Cosmetics:** residue does not char or burn after reflow soldering, even when using long/high thermal soaking
- **Safe and Environmentally Friendly:** Materials comply with ROHS, TSCA, EINECS and Halogen-free requirements (Zero Halogen, see table below)

PRODUCT INFORMATION

Packaging Sizes: 30cc syringes, 100 gram jars

APPLICATION GUIDELINES

ALPHA OM-353 may be applied by screen printing or pin transfer (substrate) or doctor blade / dip coating (package). It can also be dispensed.

Reflow can be accomplished in clean-dry air or nitrogen-controlled atmosphere. A soak profile 60 to 100 sec soak profiles have been determined to give optimal results. If required, good results are also achievable with high soak temperature profiles of 170 to 180 °C for 60 to 120s, especially in N2. Typical peak temperature is 235 to 245 °C.

Note 1: Keeping the peak temperature below 241 °C may reduce the number and size of BGA and QFN voids.

Note 2: Refer to component and board supplier data for thermal properties at elevated temperatures. Lower peak temperatures require longer TAL for improved joint cosmetics.

Note 3: These are profiles that were tested in the lab with acceptable reflow and coalescence performance, optimization to each board application should still be carried out by users to ensure best results.

ALPHA OM-353 residue is designed to remain on the board after reflow and no cleaning is required.

HALOGEN STATUS

Halogen Standards			
Standard	Requirement	Test Method	Status
JEITA ET-7304A Definition of Halogen Free Soldering Materials	< 1000 ppm Br, Cl, I, F in solder material solids	TM EN 14582	Pass
IEC 612249-2-21	Post Soldering Residues contain < 900 ppm each or total of < 1500 ppm Br or Cl from flame retardant source		Pass
JEDEC A Guideline for Defining "Low Halogen" Electronics	Post soldering residues contain < 1000 ppm Br or Cl from flame retardant source		Pass
Zero Halogen: No halogenated compounds have been intentionally added to this product			

TECHNICAL DATA

Category	Results	Procedure/Remarks
Chemical Properties		
Activity Level	ROLO	IPC J-STD-004B
Halide Content	Halide free (by titration)	IPC J-STD-004B
Fluoride Spot Test	Pass	JIS-Z-3197-1999 8.1.4.2.4
Halogen Test	Pass , Zero Halogen - No halogen intentionally added	EN14582, by oxygen bomb combustion, Non-detectable (ND) at < 50 ppm
Corrosivity	Pass	IPC Cu Mirror, Cu Corrosion and Ag Chromate Tests
Physical Properties		
Appearance	<ul style="list-style-type: none"> • Smooth & Creamy Off-White to Pale Yellow Paste • Also available in black (ALPHA OM-353B) 	
Viscosity (10rpm at 25 °C - Malcom Viscometer JIS)	150 to 250 Poise	
Acid Number (mgKOH/g)	148 to 158 mgKOH/g	
Moisture Content	Typically, 0.70% max (w/w)	
Fineness of Grind (um)	<10 µm	

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

STORAGE

The flux should be stored in sealed containers and need not be refrigerated. Shelf life of unopened containers is 6 months. If the material has been chilled, the container should be allowed to reach room temperature before opening in order to prevent moisture condensation from ambient air onto the flux.

CONTACT INFORMATION

To confirm this document is the most recent version, please contact Assembly@MacDermidAlpha.com

www.macdermidalpha.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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