No Clean Flux, Halogen Free
8351 Technical Data Sheet

Description

The 8351 *No Clean Flux, Halogen Free* is designed for lead free alloys and is also well suited for leaded alloys. Because it is low solids, this organic flux leaves virtually no residues so that the board appears cosmetically clean after exiting the wave soldering machine. It is specially designed to minimize bridge defects and solder defects.

Application

Use the MG 8351 flux for solder touch up, repair, or rework surface mount assemblies.

The 8351 is re-flowable in air or nitrogen. It can be used with profiles with peak maximum up to 270 °C and reflow times between 30 to 90 seconds.

Benefits

- **Halogen free**
- **Low residues, leaving the board and joints shinny and bright**
- **Excellent wettability**
- **Usable for both lead free and leaded alloys**
- **Rosin/Resin Free**
- **RoHS Compliant**

Usage Parameters

Store at around room temperature and protect from direct heat or sunlight.

Properties	***Value***
Shelf Life after DOM	3 y
Storage Temperature	0 to 27 °C [32 to 80 °F]

Flux Paste Properties

Physical Properties	***Method***	***Value***
Flux Classification	J-STD-004	ORL0
Appearance		Colorless
Specific Gravity	J-STD-004B	0.815 ±0.006
Surface Insulation Resistance (SIR)		
SIR, J-STD-004	IPC-TM-650 2.6.3.3	2.1×10^9 Ω
Copper Mirror	IPC-TM-650 2.3.32	Low
Acid Number (mg KOH/g)	Titration	14—16
Solids		1.8–2.4%
Cleaning Requirements	—	None

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Cleaning

The no-clean residue does not need to be removed for typical applications.

If removal is desired, a solvent system like the *MG 4140* or *MG 413B* can be used.

Health and Safety

Please see the 8351 **Safety Data Sheet** (SDS) for more details on transportation, storage, handling and other security guidelines.

Environmental Impact: The volatile organic content is 95% by EPA and WHMIS standards.

This product meets the European Directive 2011/65/EU Annex II (ROHS); recasting 2002/95/EC.

Health and Safety: Avoid breathing fumes. Wash hands thoroughly after use. Do not ingest.

HMIS® RATING

HEALTH:	* **2**
FLAMMABILITY:	**3**
PHYSICAL HAZARD:	**0**
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:
0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)

Application Instructions

This product is suitable for spray, foam, or wave fluxing application. Spray applications typically deliver 750–1500 µg/in^2. In order to keep the foam density and uniformity special attention should be paid to the air supply and tank. Compressed air supply should be free of water or oil. The flux tank should be kept full at all times. The following table lists ideal operational parameters.

Fluxing Operational Parameters

Parameters	***Typical***
Amount of flux for Foam, Wave	1000–2000 µg/in^2 solids
Foam Stone Pore Size	20–50 µm
Flux Level Above Stone	25–40 mm [1–1.5 inch]
Chimney Opening	10–13 mm [3/8—1/2 inch]
Air Pressure [a)]	1-2 lb/in^2

a) Adjust the air pressure to achieve the optimum foam height.

After fluxing, use an air knife to remove excess foam for the printed circuit board assembly.

Wave Operational Parameters

Parameters	*Typical*
Top Side Preheat Temperature	85–110 °C [190–230 °F]
Bottom Side Preheat Temperature	35 °C [65 °F]
Conveyor Speed	1.2–2.8 m/min [4–5 ft/min]
Contact Time in the Solder (including Chip & Lambda)	2.5–4.5 s

Solder Pot Temperatures

Solder Type	*Typical*
Sn96.5/Ag3.5	260–276 °C [500–530 °F]
Sn95/Ag5	280–296 °C [536–565 °F]
Sn99.3/Cu0.7	265–276 °C [510–530 °F]
Sn96.5Ag3Cu0.5	271–276 °C [520–530 °F]
Sn95Sb5	280–296 °C [536–565 °F]

Process Control

Due to the low solids content, the density cannot be used to accurately provide a measure of the solids content. Instead, titration is the preferred method of monitoring. To measure the flux content being deposited, perform a titration. If needed, the flux number activity can be reduced by thinning with the MG 824—99.9% Isopropyl Alcohol.

TIP! If debris accumulates in reservoir, purge and clean the reservoir.

Packaging and Supporting Products

Cat. No.	*Packaging*	*Net Volume*		*Net Weight*		*Packaging Weight*	
8351-125ML	Bottle	125 mL	4.23 fl oz	101 g	3.25 oz	TBD	TBD
8351-1L	Bottle	1 L	1.1 qt	809 g	26.0 oz	"	"
8351-4L	Jug	4 L	1.1 gal	3.2 kg	7.1 lb	"	"
8351-20L	Pail	20 L	5.3 gal	16.2 kg	35.6 lb	"	"
8351-55G	Drum	200 L	55 gal	161 kg	356 lb	"	"

Note: TBD = To be determined.

Suitable Flux Cleaners

- *Heavy Duty Flux Remover*: Cat. No. 413B-1L, 413B-4L, 413B-20L, 413B-425G
- *Flux Remover for PC Boards*: Cat. No. 4140-P, 4140-400G, 4140-1L, 4140-4L, 4140-20L

Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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Warranty

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