



DEVELOPMENTAL PRODUCT TECHNICAL DATA SHEET

CATEGORY: **VOC-FREE NO-CLEAN LIQUID FLUX**
NAME: **NC275**

FEATURES

- ROSIN-, RESIN- & VOC-FREE
- LOW POST-PROCESS RESIDUES
- BROAD PROCESS WINDOW
- FAST WETTING FOR SN100C AND SAC ALLOYS
- LEAD-FREE & TIN-LEAD COMPATIBLE
- HALIDE-FREE

* Passes BELLCORE (Telecordia GR-78-Core Flux Requirements) and IPC

DESCRIPTION

NC275 is a VOC-free, water-based no-clean liquid flux formulated to offer a very wide process window for lead-free and tin-lead wave soldering operations. NC275 offers faster wetting for SN100C and SAC alloys than previously formulated fluxes and is compatible with a broad range of lead-free and tin-lead solder alloys. NC275 offers low post-process residues and has proven to reduce preventative maintenance requirements for spray fluxing applications. In addition, NC275 offers fast solvent evaporation for a VOC-free flux. NC275 is designed to be a no-clean, non-visible residue flux, which can be cleaned if critical to the product application.

TYPICAL ANALYSIS

SOLIDS CONTENT	FLUX SPECIFIC GRAVITY
4.49 %	1.003

HANDLING

- NC275 has a sealed shelf life of six (6) months. Do not freeze this product.
- Do not store near fire or flame. Keep away from sunlight as it may degrade the product.
- NC275 is shipped ready-to-use; no mixing is necessary.
- Do not mix used and unused chemical in the same container. Reseal any opened containers.

FLUX APPLICATION

- NC275 is ready to use directly from the container for spray systems. No thinning is required.
- When spray fluxing, it is imperative that proper flux coverage and uniformity be achieved and maintained. A dry flux coating of 500 to 1500 micrograms per square inch is recommended as a starting point.
- When complete nitrogen sealed wave solder equipment is used, it is generally necessary to apply slightly more flux than normal as a result of excess drying due to the extended length of the equipment.

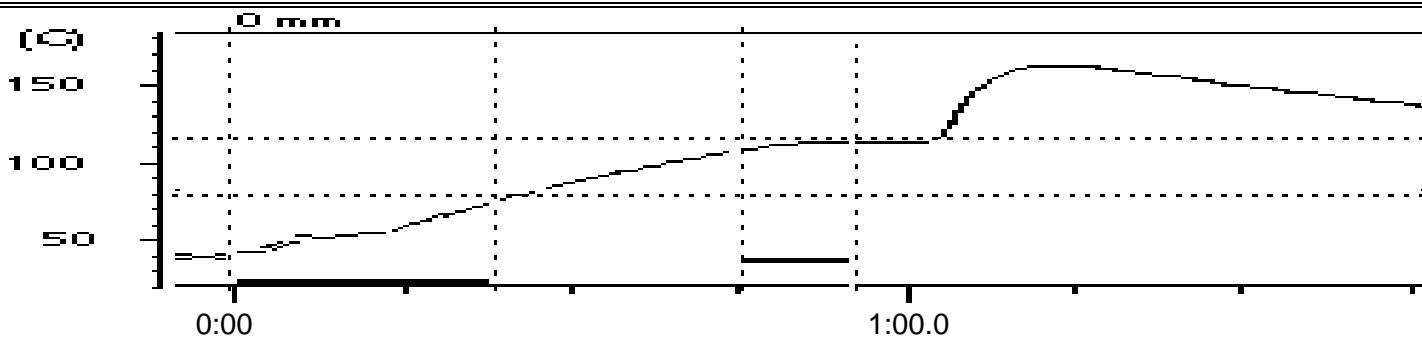
CLEANING

NC275 can be cleaned, if necessary, with water. Deionized water is recommended for the final rinse. A temperature of 100° - 150°F is sufficient for removing any residues. An in-line or other pressurized spray cleaning system is suggested, but is not required.

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TYPICAL THERMAL PROFILE



RATE of RISE 2-3 °C / SEC MAX	PROGRESS THROUGH 66°C - 77°C (150 - 170°F)	PCB TOP SIDE TEMPERATURE 90°C – 125°C (194°F - 260°F)	COOLDOWN ≤ 4°C
	≤ 40 SECONDS	JUST BEFORE WAVE	

FLUX TECH-TIPS

<u>PROBLEM</u>	<u>POTENTIAL CAUSE</u>
• BRIDGING:	INSUFFICIENT FLUX, EXCESSIVE PRE-HEAT, SOLDER CONTAMINATION
• BOTTOM SIDE MICRO BALLS:	EXCESS PREHEAT TEMPERATURE
• SOLDER BALLS:	LOW PREHEAT TEMPERATURE, EXCESS FLUX, WATER NOT FULLY EVAPORATED
• WHITE RESIDUE:	EXCESS FLUX, FLUX CONTAMINATION, SOLDER CONTAMINATION
• DISCOLORED JOINT:	SOLDER OXIDATION, BOARD/COMPONENT CONTAMINATION, EXCESSIVE HEAT

SAFETY

- Use with adequate ventilation and proper personal protective equipment.
- Refer to the accompanying **Material Safety Data Sheet** for any specific emergency information.
- Do not dispose of any hazardous materials in non-approved containers.



PRODUCT TESTING RESULTS

CATEGORY:

VOC-FREE NO-CLEAN LIQUID FLUX

NAME:

NC275

TELCORDIA GR-78-CORE (BELLCORE) TESTING

Abstract

This report summarizes the test results of copper mirror, halide ion, and electromigration for AIM VOC-Free 275 Liquid Flux. The tests were conducted according to the requirements of Telcordia GR-78-CORE (Bellcore) Generic Requirements.

Test	Conditions	Results	Spec.
Copper Mirror	24 Hrs., 25C, 50%RH	Medium	no holes in mirror
Halide Test (Silver Chromate)	ambient condition	Passed	no white ppt.
Electromigration	65°C/85% RH, 500Hrs.		
	Initial	7.90E+09 Ohms	
	Final	1.18E+11 Ohms	$R_f / R_i > 0.1$
		Passed	

Control		Initial	log Initial	Final	log Final
#1	A	5.70E+10	10.7559	6.93E+10	10.8407
	B	6.93E+10	10.8407	8.27E+10	10.9175
	C	5.13E+10	10.7101	8.69E+10	10.9390
	D	4.74E+10	10.6758	8.06E+10	10.9063
#2	A	5.18E+10	10.7143	7.41E+10	10.8698
	B	6.89E+10	10.8382	7.90E+10	10.8976
	C	6.13E+10	10.7875	7.24E+10	10.8597
	D	6.17E+10	10.7903	7.34E+10	10.8657
#3	A	6.14E+10	10.7882	7.40E+10	10.8692
	B	2.81E+10	10.4487	8.12E+10	10.9096
	C	6.15E+10	10.7889	7.44E+10	10.8716
	D	5.96E+10	10.7752	7.45E+10	10.8722
Average		5.53E+10	10.7428	7.67E+10	10.8849
NC 275		Initial	log Initial	Final	log Final
#1	A	7.06E+10	10.8488	1.85E+11	11.2672
	B	1.73E+10	10.2380	1.92E+11	11.2833
	C	4.21E+10	10.6243	1.61E+11	11.2068
	D	1.44E+10	10.1584	1.93E+11	11.2856
#2	A	5.12E+09	9.7093	8.63E+10	10.9360
	B	8.68E+09	9.9385	1.26E+11	11.1004
	C	1.00E+10	10.0000	1.07E+11	11.0294
	D	1.76E+09	9.2455	9.40E+10	10.9731
#3	A	1.95E+09	9.2900	9.15E+10	10.9614
	B	5.09E+09	9.7067	1.00E+11	11.0000
	C	2.33E+09	9.3674	6.85E+10	10.8357
	D	4.38E+09	9.6415	9.81E+10	10.9917
Average		7.90E+09	9.8974	1.18E+11	11.0725

Conclusions

The results of the qualification tests indicate that AIM VOC-Free 275 Liquid Flux meets the requirements of Telcordia GR-78-CORE (Bellcore) Generic Requirements. This material is approved for use.

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