Lead-Free/RoHS Status

All Fagor Electronica S. Coop devices have lead-free terminations since 2005.

Terminations are pure matte tin plated, with a thickness spec of > 7µm, < 20µm. Annealing 1 hour @ 150ºC within 24 hours after plating because coating is done directly over bare cooper, there is no underlayer.

The qualification of this process change was done in 2005, according to following tests and criteria:

Test	Test Description	Test Conditions	# Lots	#Units	#Fail
Visual Inspection	Microscope X50 magnification	As per solder plating criteria	3	150	0
Plating Thickness	XRF (Fischercope)	7-20 µm	3	30	0
Solderability J-STD-22B-102D	After Plating	Common for the 3 tests: • 245ºC, 3sec. • Solder SnAg3Cu0.5 & • Solder Sn63/Pb37 • Acceptance criteria 95%	3	90	0
	After Preconditioning: PCT 105ºC, 16H		3	90	0
	After Preconditioning: 155ºC, 16H		3	90	0
Resistance to Solder Heat JESD22-B106C	Diping	260 °C ± 5 °C, 10 sec.	3	9	0
	Iron Solder	350ºC, 3.5 sec.	3	9	0

Devices have been re-qualified according to the updated standards of solderability J-STD-22B-102D-1 and Resistance to Solder Heat JESD22-B106D.

Devices lead-free plated meet the soldering profile defined in J-STD- 020-C or greater.

- Peak Reflow Temperature (Deg C): 260ºC
- Time @ Peak Reflow Temperature (sec): 30
- Maximum Number of Cycles Allowed @ Peak Reflow Temperature: 3
- MSL 1

Because all Fagor devices are Lead-free, devices part number have no suffix for identification purpose.

Devices with lead-free terminations are identified in the data sheet with the symbol 

and the pure tin plating is identified with the symbol 

Whisker Testing

In terms of whiskers length Fagor applied at that time the following test and criteria according to JESD22A121, JESD201A & JP002 standards:

Test	Test Conditions	Time/ Cycles	Lot	Units	Acceptance Criteria
Room Temp. Storage	25°C; 30-80% RH, SEM 3000X	5000 hrs	3	9	<40µm length
Temperature Cycles	-40°C +150ºC SEM 3000X	2000 cycles	3	9	<45µm length
High Humidity Storage	85ºC, 85% R.H. SEM 3000X	5000 hrs	3	9	<40µm length