

MSL Baking Instruction

Customer Quality Engineering

December, 2011

Moisture Caution Label – MSL 2



CAUTION
This bag contains
MOISTURE-SENSITIVE DEVICES

Level

2

1. Shelf life in sealed bag: 36 months at $< 40^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of 220°C) must be:
 - a) Mounted within **1 year** at factory conditions of $\leq 30^{\circ}\text{C}/60\%$ RH, or
 - b) Stored at $\leq 10\%$ RH
3. Devices require baking before mounting if:
 - a) Humidity indicator card shows humidity $> 60\%$ when measured at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, or
 - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
 - a) **12** hours at $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for high-temperature device containers.
 - b) Baking at $40^{\circ}\text{C} +5^{\circ}\text{C} / -0^{\circ}\text{C}$ and $< 5\%$ RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): _____

Note: LEVEL defined by IPC/JEDEC J-STD-020

Moisture Caution Label – MSL 3



CAUTION

This bag contains
MOISTURE-SENSITIVE DEVICES

Level

3

1. Shelf life in sealed bag: 36 months at $< 40^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of 220°C) must be:
 - a) Mounted within **168 hours** at factory conditions of $\leq 30^{\circ}\text{C}/60\%$ RH,
or
 - b) Stored at $\leq 10\%$ RH
3. Devices require baking before mounting if:
 - a) Humidity indicator card shows humidity $> 10\%$ when measured at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, or
 - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
 - a) **12** hours at $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for high-temperature device containers.
 - b) Baking at $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$ and $< 5\%$ RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): _____

Note: LEVEL defined by IPC/JEDEC J-STD-020

Moisture Caution Label – MSL 4



CAUTION

This bag contains
MOISTURE-SENSITIVE DEVICES

Level

4

1. Shelf life in sealed bag: 36 months at $< 40^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of 220°C) must be:
 - a) Mounted within **72 hours** at factory conditions of $\leq 30^{\circ}\text{C}/60\%$ RH, or
 - b) Stored at $\leq 10\%$ RH
3. Devices require baking before mounting if:
 - a) Humidity indicator card shows humidity $> 10\%$ when measured at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, or
 - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
 - a) **12 hours** at $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for high-temperature device containers.
 - b) Baking at $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$ and $< 5\%$ RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): _____

Note: LEVEL defined by IPC/JEDEC J-STD-020

Moisture Caution Label – MSL 5a



CAUTION

This bag contains
MOISTURE-SENSITIVE DEVICES

Level

5a

1. Shelf life in sealed bag: 36 months at $< 40^{\circ}\text{C}$ and $< 90\%$ relative humidity (RH)
2. After this bag is opened, devices that will be subjected to convection reflow, or equivalent processing (peak package body temperature of 220°C) must be:
 - a) Mounted within **24 hours** at factory conditions of $\leq 30^{\circ}\text{C}/60\%$ RH, or
 - b) Stored at $\leq 10\%$ RH
3. Devices require baking before mounting if:
 - a) Humidity indicator card shows humidity $> 10\%$ when measured at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, or
 - b) Condition 2a or 2b is not met.
4. If baking is required, devices may be baked for:
 - a) **12 hours** at $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for high-temperature device containers.
 - b) Baking at $40^{\circ}\text{C} \pm 5^{\circ}\text{C} / -0^{\circ}\text{C}$ and $< 5\%$ RH for low-temperature device containers is **NOT RECOMMENDED**.

Bag Seal Date (MM/DD/YY): _____

Note: LEVEL defined by IPC/JEDEC J-STD-020

Moisture Caution Label – MSL 6

