# Usage of SUPERDRY on Production Process

## Flowchart for an organic materials system BGA manufacturing plant and the need to control moisture absorption

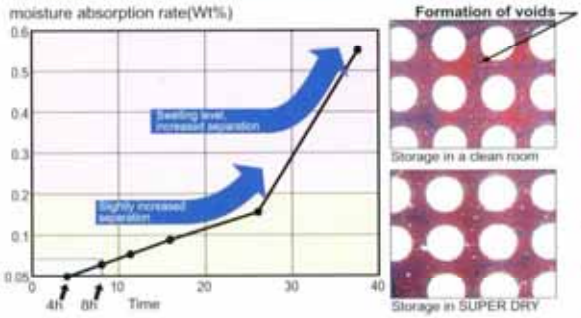
Even after baking (dehydration), moisture will be absorbed immediately if it is left in the clean room, and high temperature heating in the next process will cause separation between LSI chips and the organic board!!

Reference : Moisture absorption characteristics of PI (polyimide) boards (time to reach 0.2 weight percent) 75 mm thick, pretreated by baking for 30 min at 150℃

20% RH, 25℃: 10h
40% RH, 25℃: 5h
60% RH, 25℃: 3h
80% RH, 25℃: 2.5h

Separation level causing risk of quality problems
Separation causing failure in high level reliability test
Safe area

PI tape board (25℃,50% environment)
Separation observed after baking at 300℃ or more







Visually detectable separation occurs from a moisture absorption rate of 0.3%

In the case of high temperature processing in the assembly process, separation occurs readily in highly absorbent organic boards.
Therefore, moisture absorption must be completely controlled between processes.

## Basic process flow

Organic board, PI tape, BT etc.

Pelletize

Pre-mount baking

high temperature processing → Mount

Mount baking

high temperature processing → Bonding

Plastic resin sealing

Plastic baking

Solder ball mounting

high temperature processing → Reflow

Washing

Cutting

END

## Flow of production processes after introducing SUPERDRY

**SUPER DRY storage for all finished items**

Items that have been worked in within a few hours of their removal from SUPERDRY should always be kept in SUPERDRY each time.

**SUPER DRY success!!**

1. Stabilization of quality by preventing absorption of moisture of organic boards
2. No need for low temperature re-baking (100 to 125℃) after leaving SMD in the clean room
3. Can be operated for a monthly electricity cost of about US$5.00.
4. Humidity can be set anywhere from 1 to 50%
5. Dehydration can be achieved by leaving in store for an extended period (about 24 hours: time is varied according to SMD)
6. Since the drying agent can be re-used semipermanently, maintenance is hardly necessary

**Stable quality improvement can be achieved with a low cost investment**