

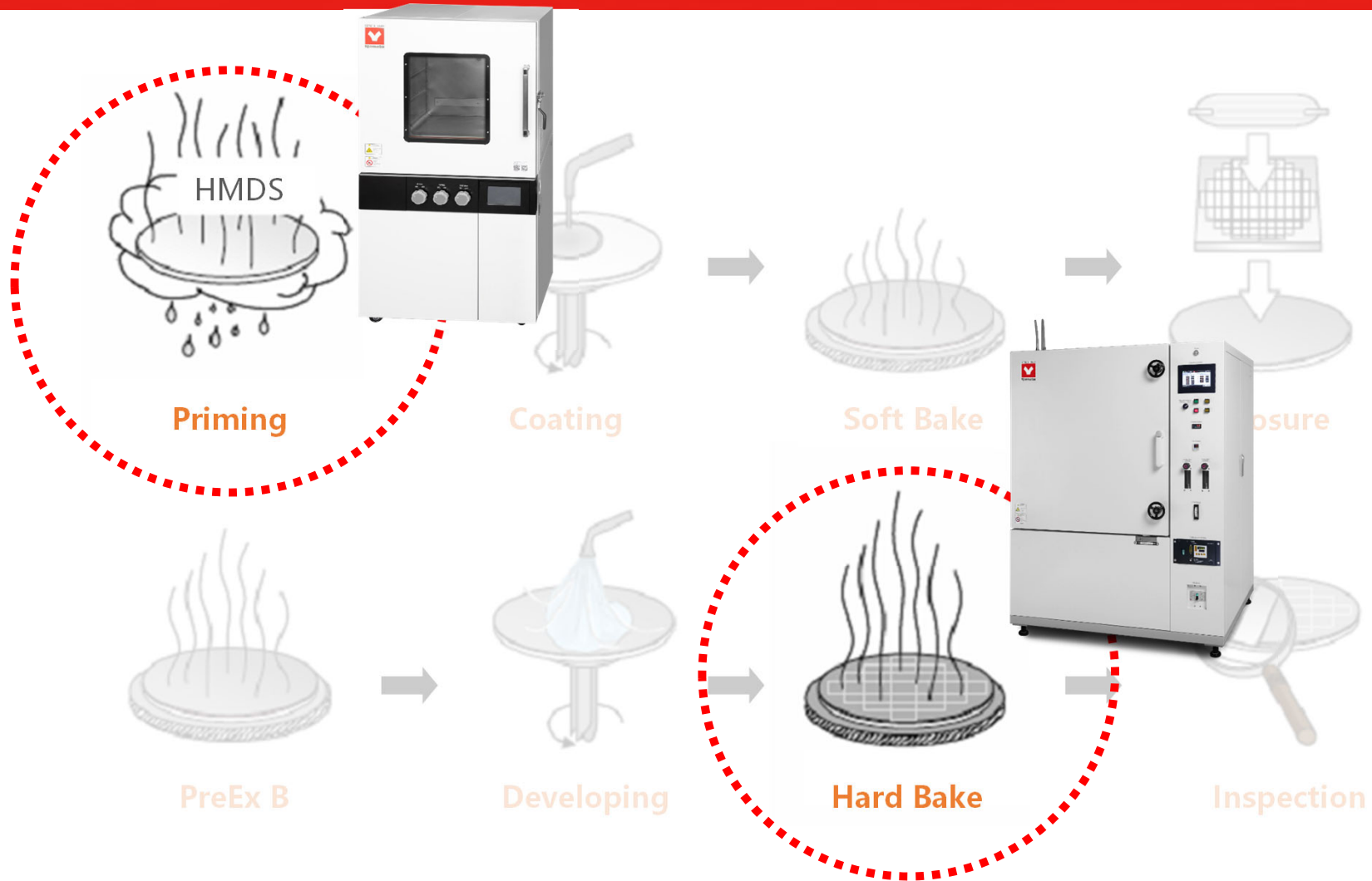
SINCE 1889



# **Yamato Scientific**

## HMDS Vapor Prime Ovens & Curing Ovens

# Semiconductor Wafer Fabrication: Photolithography Process



# HMDS Vapor Prime/Coating



## Applications:

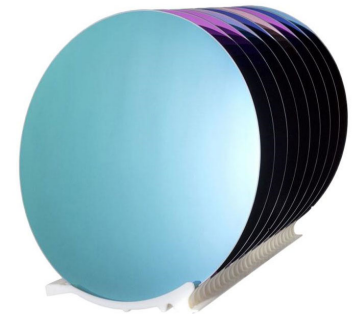
A layer of HMDS (Hexamethyldisilazane) is uniformly coated on the surface of the silicon wafer and substrate. Heating causes a reaction that generates a compound primarily composed of siloxane. This hydrophobic compound forms on the surface of the silicon wafer, allowing its hydrophobic groups to bond effectively with the photoresist. As a result, the difficulty of spreading the photoresist on the silicon wafer is reduced, and the adhesion between the photoresist and the silicon wafer is improved.

Temp.

Vacuum

## Specifications:

- Max. Temp: 200 °C
- Vacuum: < 100 Pa
- Heating method: Wall heating(four sides)
- Vacuum pump: Kashiya
- Controller: 7-inch TFT color touch screen



# Photoresist Curing-Atmosphere Furnace

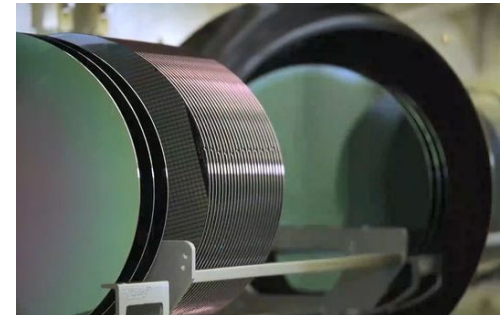


## Applications:

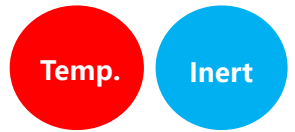
The photoresist coated on the wafer surface was cured at high temperatures to improve adhesion and to evaporate the solvent within the photoresist. Depending on the process parameters for different photoresists, the curing temperature is typically either 350° C or 450° C.

## Specifications:

- Max. Temp. 360 °C/ 500 °C
- Cleanness: Class 100
- Oxygen: < 20 ppm



# Semiconductor Packaging: Epoxy & Molding Curing (High Temp. Inert Oven)



## Applications:

**Epoxy Curing:** The chip is attached to the lead frame coated with epoxy resin, which is then cured at a high temperature, usually 175°C. An N<sub>2</sub> environment is required to prevent oxidation.

**Molding Curing:** Used to cure the plastic sealing material, this process protects the internal structure of the IC and eliminates internal stress.

## Specifications:

- Structure: Single chamber/ 2 chambers/ 4 chambers/ 6 chambers
- Max. Temp.: 260 °C
- Temp. deviation: ±5 °C



2-chamber



4-chamber



6-chamber

# Semiconductor Packaging: Plating (High Temp. Oven)



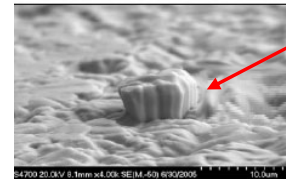
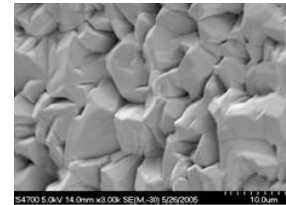
Temp.

## Applications:

Bake the electroplated product at a high temperature for a period of time to eliminate potential crystal whisker growth problems in the plating layer. The temperature is usually 175°C, and the time is 2 hours.

## Specifications:

- Max. Temp.: 260 °C
- Temp. deviation:  $\pm 5$  °C



Whisker, refers to a whisker crystal that grows out of tin in a humid environment and temperature changes for a long time, which may lead to a short circuit of the product pin.

# Yamato Scientific Drying Products



	Ordinary Drying Oven	Cleaning Drying Oven	Vacuum Drying Oven	Moisture-proof Cabinet	Nitrogen Cabinet
Application	Drying of various fixtures and components in the production process			Long time storage of raw materials after opening the outer package	
Applicable	Metals	Quartzoid	Ceramics, graphenes	Moisture absorbing material	Oxidizable material
Features	High temperature	High temperature Cleanness: class100	High temperature + vacuum	Electronic dehumidification	N <sub>2</sub> environment

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Thank You!