

## Dry oxide process control T3 OXIDE

<b>Tool name:</b>	T3-GATE OX	<b>Recipe name:</b>	T3-904PC
<b>Purpose:</b>	800 °C Dry oxide recipe		
<b>Restrictions:</b>	Clean Si wafer for test (HF dip)		
<b>Description:</b>	Procedure for determining Dry oxidation thickness (50 Å)		
<b>Procedure:</b>	See below		

### 1. Procedure

Process control shall be done regularly of the Thermco furnace. The process control shall be done at least once each quarter.

### 2. Process

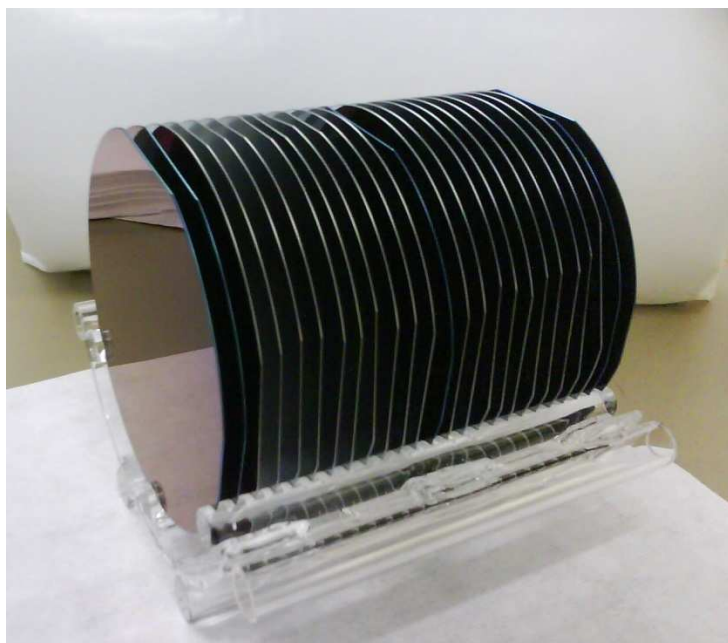
#### 2.1 Prefurnace clean

The test wafers shall be cleaned from oxide in HF.

#### 2.2 Loading

Wafers shall be placed in position 1, 2, 13, 24 and 25 shall be test wafers, i.e. clean wafers with no oxide.

The test wafers shall be loaded in the boat with the flat of the wafers up and the back side of the wafer pointing into the tube, see picture. If possible, fill the rest of the boat with dummy wafers.



Picture 1. Boat loaded with test wafers with flat up and front side of wafers pointing into the tube.

## 2.1 Dry oxidation

A standard recipe, T3-904PC shall be used. The recipe is described below.

T3-904PC								
Step	Temp (°C)	Time hh:mm	N2 (L)	O2 (L)	H2 (L)	N2O (L)	DCE (L)	Comments
Standby	625	-						
Boat in	625	-	10	-	-	-	-	
Stabil	625	00:10	10	-				
Ramp up	800	00:25	10	-	-	-	-	Ramp rate 8 °C/min
Stabil	800	00:20	10	-	-	-	-	
Dry ox start	800	00:02	10	10	-	-	-	MFC O2 start
Dry oxidation	800	<b>50:00</b>	8	10	-	-	-	Oxidation
Dry ox stop	800	00:02	10	-	-	-	-	MFC N2 start
Ramp down	625	01:30	10	-	-	-	-	Ramp rate 4 °C/min
Hold	625	-	10	-	-	-	-	Waiting for Boat out
Boat out	625	-	10	-	-	-	-	

## 1. Measuring

The wafers should be measured on the UVISEL ellipsometer.

The measurement should be done with preferable a 25 point program, but at least 5 points.

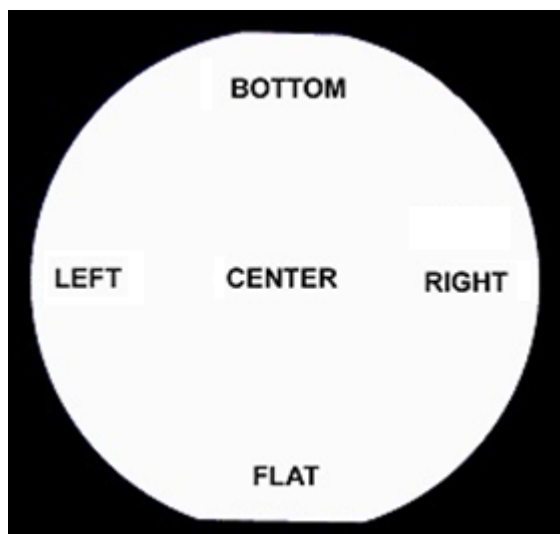
Program directory: EKT\_standard

Program: cSi\_SiO2\_mwl.rcm

Grid: 100mm\_25\_point.grd

Fix – Nominal value: 5 nm

The wafer should be placed with the flat towards you.



Type of document/Dokumenttyp

**Process control**

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File

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## **Appendix**

### **Recipe**

#### **T3-904PC**

PHASE 800GATE

GOSUB DINITCON

GOSUB DSAFE

GOSUB DBOAT IN

GOSUB R625T800

GOSUB DSETGAS

GASFLOW N2

DELAY 00:50:00

GOSUB DGAS OFF

DELAY 00:20:00

GOSUB R800T625

HOLD

GOSUB DBOATOUT

END