Step 1: Substrate Stack

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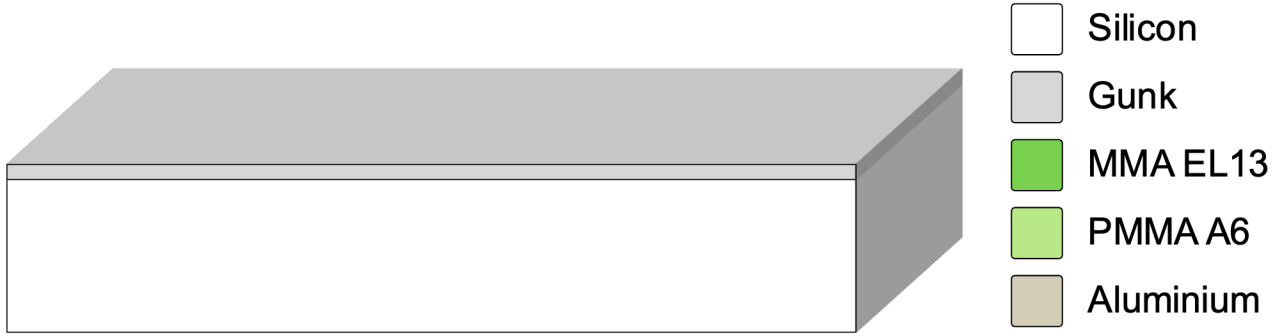
- **Width:** 5000 nm
- 5000 nm
- **Layer 1:** Silicon
- **Thickness:** 1000 nm
- **Layer 2:** Gunk
- **Thickness:** 100 nm

Comments: 111 crystal axix



Step 2: 3 Solvent Clean

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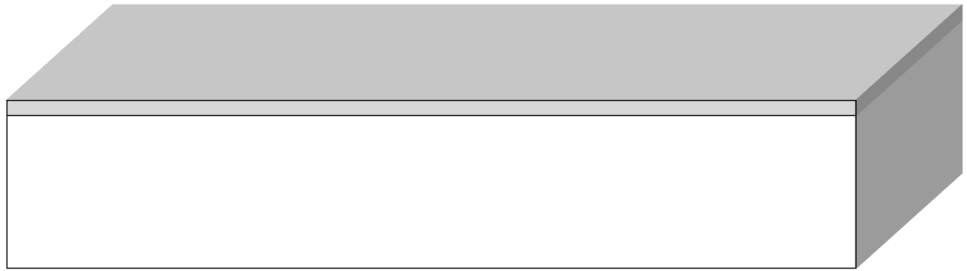
Beakers + Sonicator

- **Chemical:** Acetone
- **Time:** 5 mins
- **Temp:** 20 °C
- **Ultra Sonic:** true

Comments: Sonicate in Acetone for 6 minutes

Sonicate in Methanol for 3 minutes

Sonicate in IPA for 3 minutes



Step 3: DI Water Rinse

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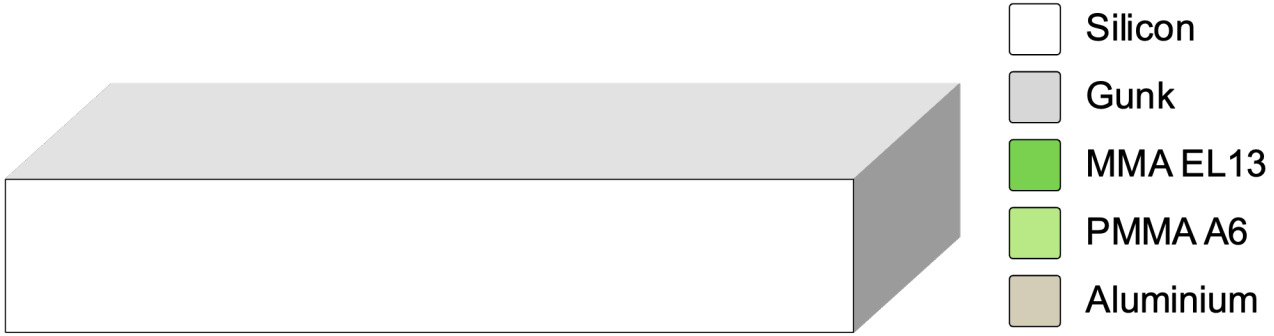
Beakers

- **Chemical:** DI Water
- **Time:** 30 secs
- **Temp:** 25 °C
- **Ultra Sonic:** false

Comments: Dry with N2 gun



Step 4: Dehydration Bake

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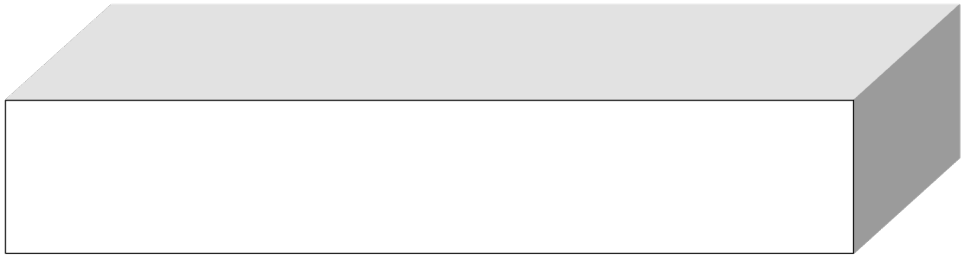
Bake Plate

- **Temp:** 110 °C
- **Time:** 20 secs

Comments: 110 to 180 degree C allowed



Step 5: Spin Resist

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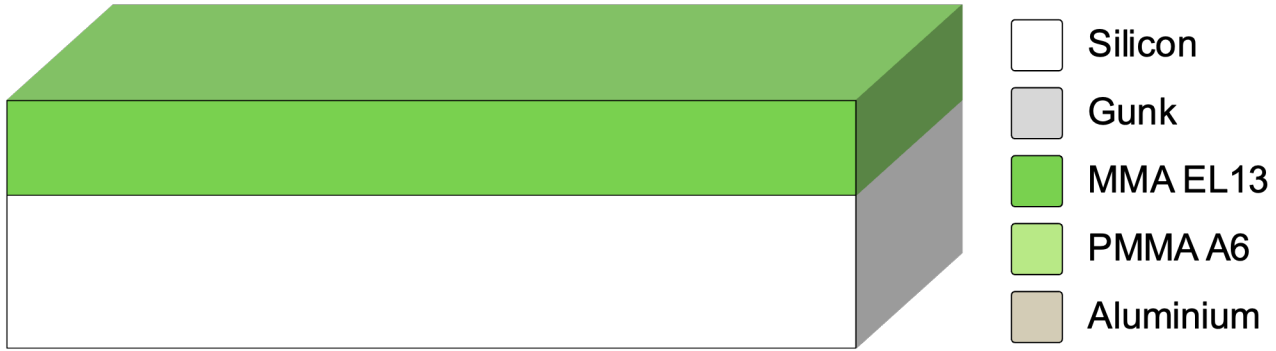
Spinner

- **Material:** MMA EL13
- **Thickness:** 620 nm
- **Spin Speed:** 3000 rpm
- **Spin Time:** 60 secs

Comments:



Step 6: Softbake

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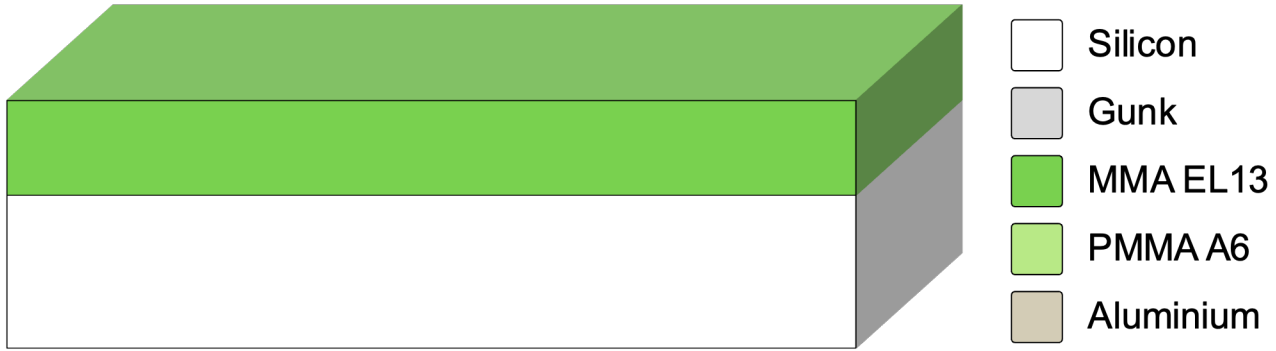
Bake Plate

- **Temp:** 180 °C
- **Time:** 300 secs

Comments:



Step 7: Spin Resist

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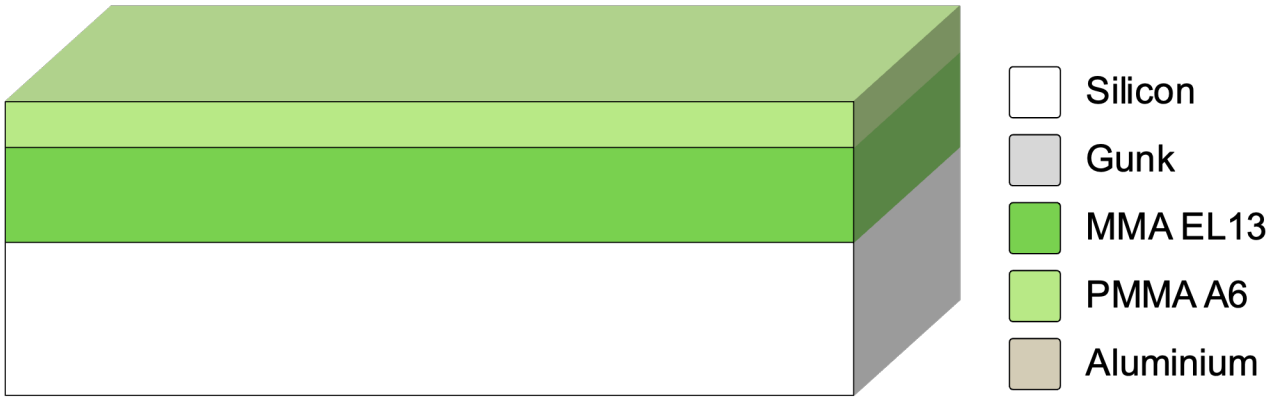
Spinner

- **Material:** PMMA A6
- **Thickness:** 300 nm
- **Spin Speed:** 4000 rpm
- **Spin Time:** 60 secs

Comments:

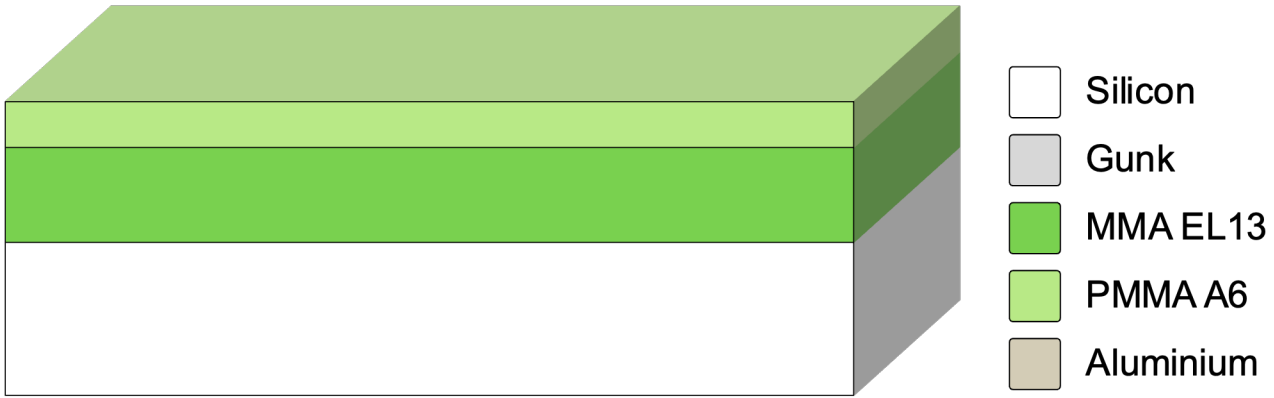


Step 8: Softbake

Bake Plate

- **Temp:** 180 °C
- **Time:** 300 secs

Comments:



Step 9: Electron-Beam Lithography

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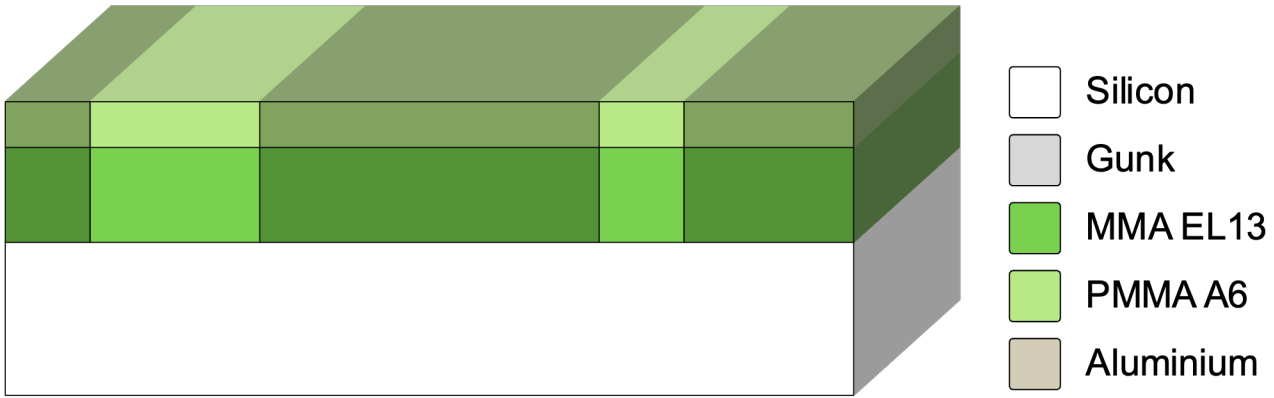
Raith EBPG 5150

- **Voltage:** 100 kV
- **Current:** 100 nA
- **Dose:** 290 μC/cm²
- **Dwell Time:** <none> ns

Comments:



Step 10: Develop

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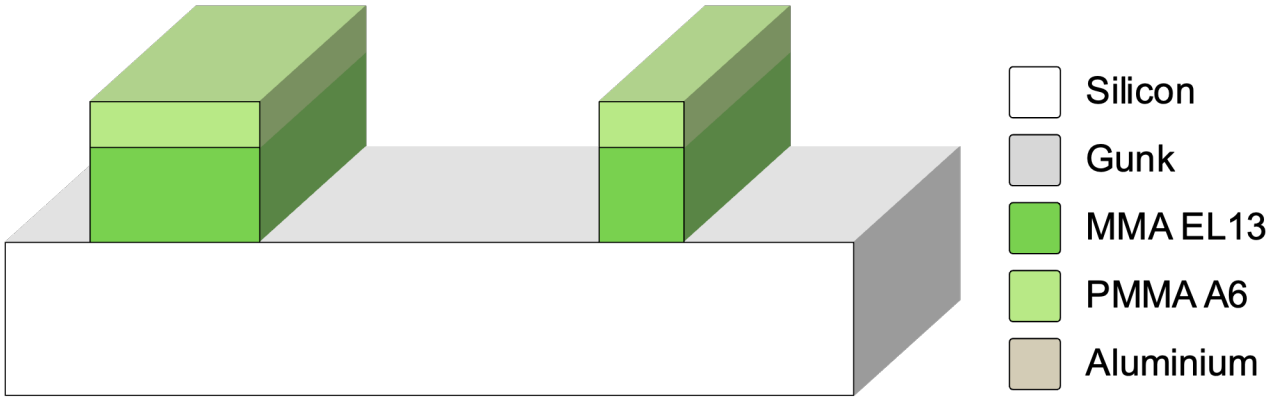
Beaker

- **Developer:** MIBK:IPA
- **Time:** 180 secs
- **Temp:** 20 °C

Comments: MIBK:IPA = 1:1

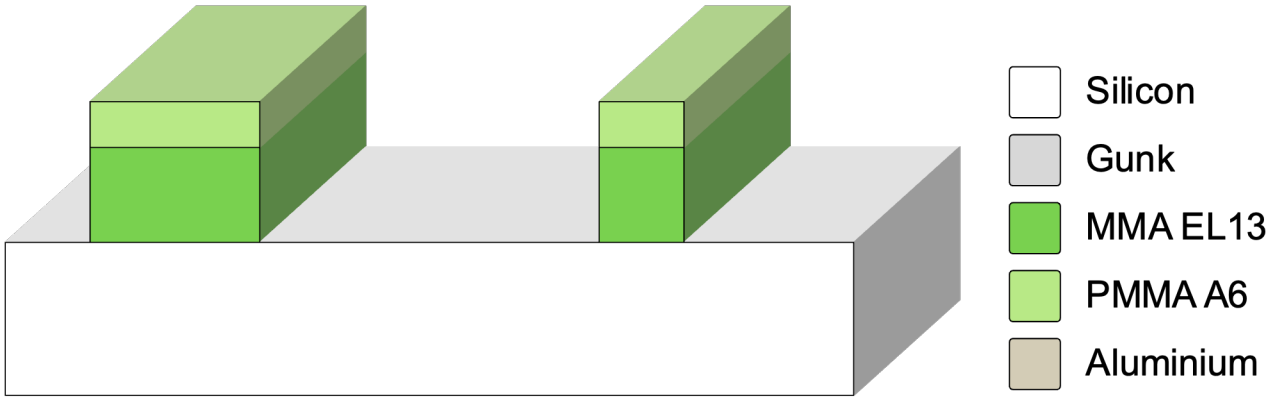


Step 11: Pre-Ash

YES 02 Plasma

- **Material:** Gunk
- **Depth:** 0 nm
- **Gasses:** Oxygen
- **Etch Rate:** <none> nm/s
- **Time:** 30 secs
- **RF Power:** 60 Watts
- **Pressure:** 0.3 Torr
-

Comments:



Step 12: E-beam Evaporation

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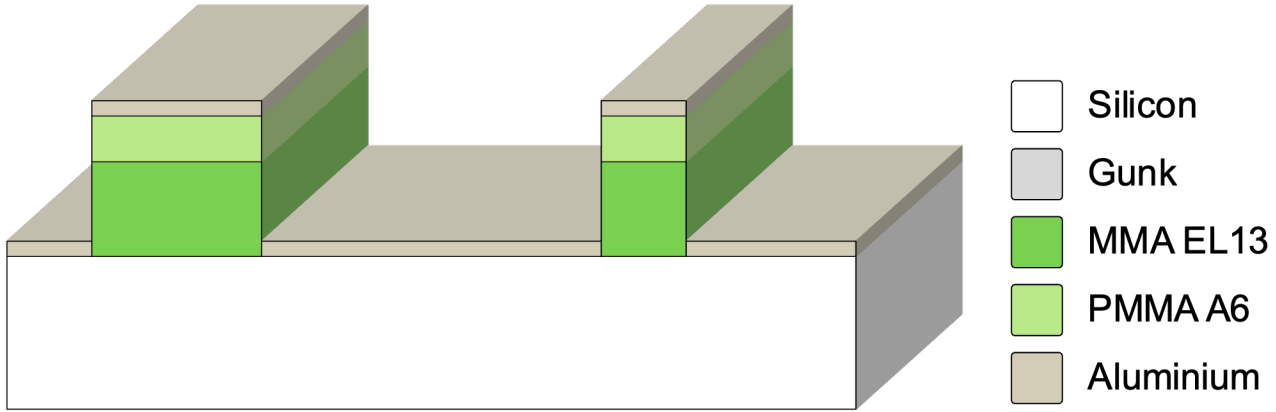
Angstrom

- **Material:** Aluminium
- **Thickness:** 1000 Å
- **Deposition Rate:** 4 Å/s
- **Beam Current:** <none> Amps
- **Beam Voltage:** <none> kV
- **Pressure:** <none> Torr
- **Deposition Angle:** 0°

Comments:

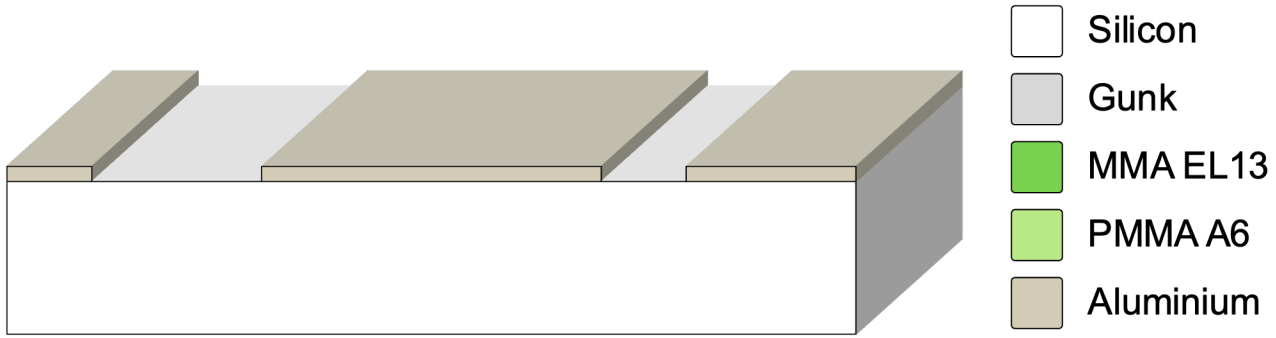


Step 13: Lift-Off

Beaker + Sonicator

- **Solvent:** Acetone
- **Time:** 3 hours
- **Temp:** 45 °C

Comments:



Step 14: 3 Solvent Clean

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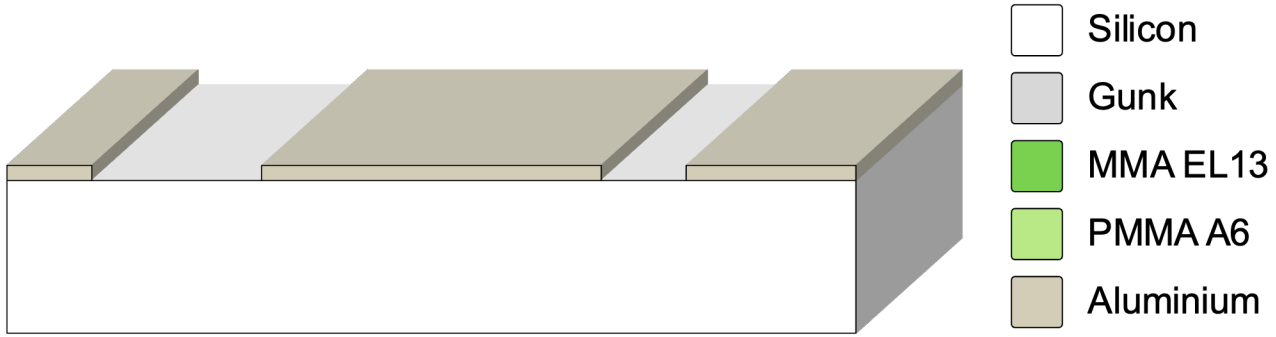
Beaker

- **Chemical:** Acetone
- **Time:** 30 secs
- **Temp:** 25 °C
- **Ultra Sonic:** true



Comments: Sonicate the chip in the acetone liftoff beaker for 30 seconds (more time if the liftoff has not been completed.)

With the acetone wash bottle in the other hand, take the chip out of the acetone slowly as maintaining a

Step 15: DI Water Rinse

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Your Friendly Fab Assistant

Beaker

- **Chemical:** DI Water
- **Time:** 30 secs
- **Temp:** 25 °C
- **Ultra Sonic:** false

Comments: Dry with N2 gun