

Polyvinyl alcohol

Contamination Clearance Chemical Safety Approval

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INUP Users



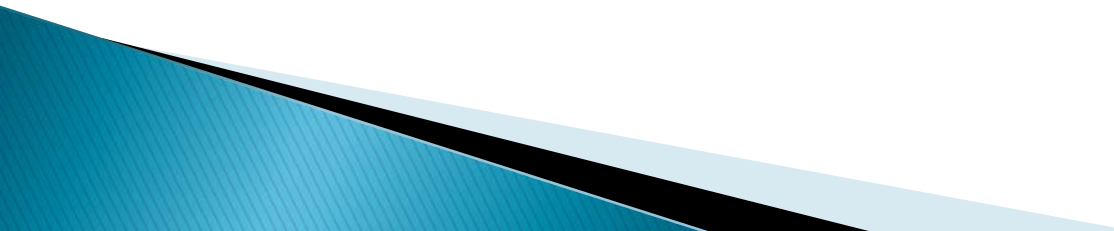
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About the Chemical

- ❖ Polyvinyl alcohol is a stable material
- ❖ Polyvinyl alcohol will be used in solution form and will be spincoated on silicon wafer.

Chemicals to be Used

- ❖ Poly(vinylidene fluoride – TriFluoroethylene)
 - ❖ **Polyvinyl alcohol will be used in solution form and will be spincoated on silicon wafer**
 - ❖ Chromium Cr, Gold Au,
 - ❖ DMA, IPA
 - ❖ Positive Photoresist
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Overview of Process

- RCA cleaning (2 inch silicon wafers)
- Growth of 0.1 micron SiO_2 layer
- Spin PVA, 1000rpm, 20 sec bake at 95°C
- Spin photoresist PPR, bake, expose mask 1: MJB4 for defining PVA sacrificial layer
- Etch PVA in water and remove PPR in acetone
- Spin P(VDF-TrFE) and bake at 120°C
- Spin PPR mask2 for Cr/Au Contacts
- Evaporate Cr/Au followed by liftoff
- Spin PPR and Expose mask 3, etch P(VDF-TrFE) in DMA
- Removal of PVA sacrificial layer in warm water to float cantilevers

HAZARDS IDENTIFICATION

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

COMPOSITION/INFORMATION ON INGREDIENTS

Composition:

Name	CAS #	% by Weight
Polyvinyl alcohol	9002-89-5	100

Toxicological Data on Ingredients: Not applicable.



FIRST AID MEASURES

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:

Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:

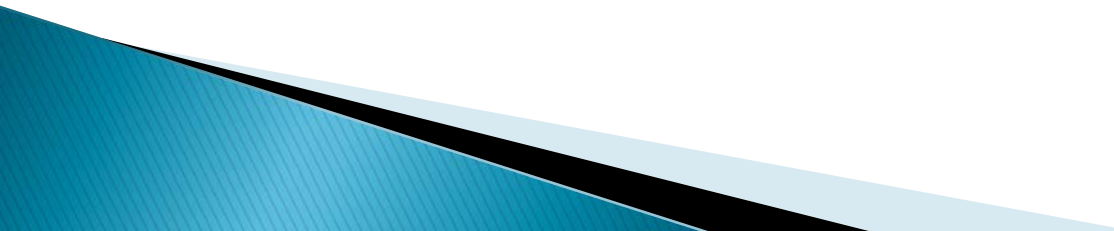
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.



Fire and Explosion data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: OPEN CUP: 79°C (174.2°F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances:

Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

ACCIDENTAL RELEASE MEASURES

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

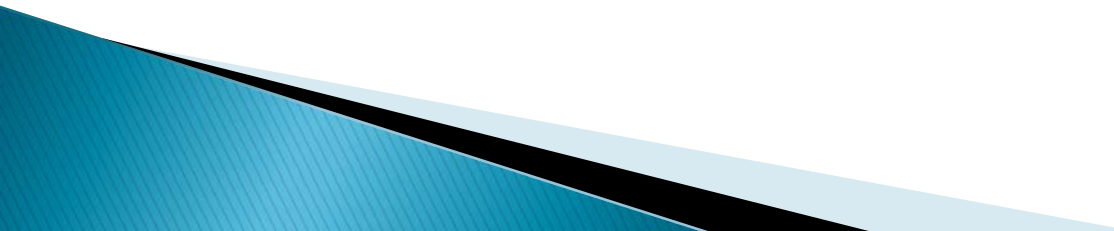
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

HANDLING AND STORAGE

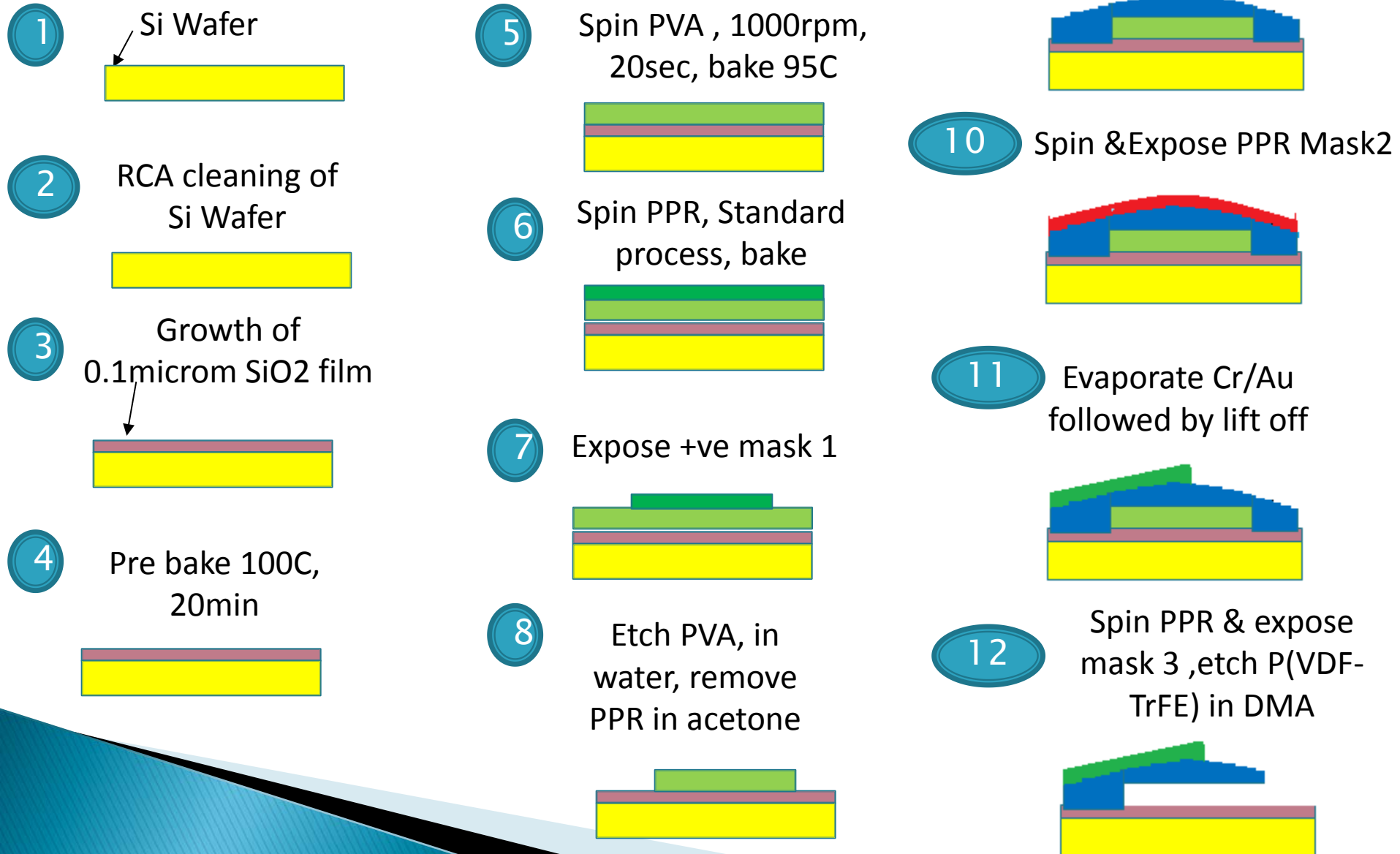
Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. est. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, metals, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.



❖ Process Flow



THANK YOU