Chemical solutions to develop and strip photoresist and solder mask from PCB

General rules:

* Before applying: degrease the surface of PCB
* There is NO safe photochemistry. Use smelly stuff only if there is no other choices!
* Work in well ventilated area only!
* USE personal protection equipment: goggles, gloves, coat!

Both, photoresist and solder masks, are divided into 2 categories depending on behavior under curing light:

* Positive  
  Areas, exposed to UV light, will be removed after developing. Unexposed areas will stay.
* Negative  
  Areas, exposed to UV light, will stay after developing. The UV light causes polymerization of photosensitive material causing it to become difficult to dissolve. Unexposed areas will be removed!

Note: many are confused by term “soda” due to many possible variations:

* Baking soda: NaHCO3
* Washing soda[[1]](#footnote-1): Na2CO3 x 10 H2O
* Caustic soda[[2]](#footnote-2): NaOH

Those are all different compounds, not replaceable.

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# Chemical solutions for photoresist

## Positiv 20

Developing:

* 10 g/L NaOH

Stripping:

* acetone

References:

* Positiv 20 Technical Datasheet

## Kinsten

For Kinsten[[3]](#footnote-3) (according to this [demo](https://www.youtube.com/watch?v=iqrtG-Epn9A)):

* Developing: 0.7% NaOH aqueous (7g/L)
* Stripping: 3% NaOH (30 g/L)[[4]](#footnote-4)

## ORDYL ALPHA 350

For film photoresist ORDYL ALPHA 350[[5]](#footnote-5) :

* Developing:
  1. 1% NaOH
  2. 1% Na2CO3

References:

* <https://www.youtube.com/watch?v=OhyIRpoF_wQ>

## Film photoresist from Aliexpress

For positive film photoresist from Aliexpress:

* Developing:
  1. 1 teaspoon (with hill) of per 250 ml of water
  2. 10 g/L
  3. 15-20 g/l of washing soda [[6]](#footnote-6)
* Striping:
  1. Acetone
  2. Can be used same as developing, but used for longer time

References:

* <https://www.youtube.com/watch?v=wX2O-8XWl6Y>
* https://www.youtube.com/watch?v=\_EBXUawZj5g

# Chemical solutions for developing solder masks

Before applying solder mask need to degrease the surface of PCB (can be done with acetone)

## Dynamask 5000

For Dynamask 5000[[7]](#footnote-7):

* 1% NaOH aqueous

After developing it needs to be baked at 150 centigrade for 1 hour.

## Mechanic LY-UVH900

For single component mask Mechanic LY-UVH900 (according to this [demo](https://www.youtube.com/watch?v=lgOAQJ9KCBM)):

Before applying: dry out the PBC to remove residual humidity

* Can be wiped with a dry cotton ball

References:

* <https://www.youtube.com/watch?v=lgOAQJ9KCBM>

## FSR-8000

Dual component solder mask FSR 8000 (according to [this](https://www.youtube.com/watch?v=qUjP3xz5Cec) and [this](https://www.youtube.com/watch?v=k9Zf0L1PH4Y) demos):

* Developing: 4-5 table spoons of liquid glass per 1 L of water

After developing: rinse with water, dry out and bake at 150 centigrade for 1 hour

References:

* <https://www.youtube.com/watch?v=9Ys5Ya0ZxcE>
* <https://www.youtube.com/watch?v=k9Zf0L1PH4Y>
* <https://www.youtube.com/watch?v=qUjP3xz5Cec>
* <https://www.radiokot.ru/lab/hardwork/57/>

Items, not to buy:

* noName bulk masks: inconsidtent mixing

1. Кальцинированная сода [↑](#footnote-ref-1)
2. Каустическая сода [↑](#footnote-ref-2)
3. Kinsten is a Chinese trademark for PCB materials covered with positive photosensitized compound. Check aliexpress for GS3045, GD1520, GS1530, PP1510. Technically proper description is : SBR paper laminate (synthetic-resin based paper laminate), sometimes referred to as “getinaks” [↑](#footnote-ref-3)
4. Or, just concentrated NaOH-based pipe drainer! [↑](#footnote-ref-4)
5. If use laminator for adhesion: use 110-115 centigrade temperature. [↑](#footnote-ref-5)
6. Washing soda is a . The idea is the same as with sodium carbonate, but corrected due to the water content in compound itself. It is sold as kitchen chemical for cleaning. [↑](#footnote-ref-6)
7. If applying with laminator: use ~ 90 centigrade centigrade [↑](#footnote-ref-7)